



# STIC Search Report

EIC 1700

STIC Database Tracking Number: 10/786372

**TO:** Dawn Garrett  
**Location:** 10C79  
**Art Unit :** 1774  
**June 24, 2005**

**Case Serial Number:** 10/786372

**From:** Usha Shrestha  
**Location:** EIC 1700  
**REMSEN 4B28**  
**Phone:** 571/272-3519  
**usha.shrestha@uspto.gov**

## Search Notes



## SEARCH REQUEST FORM

Scientific and Technical Information Center

Requester's Full Name: DAWN GARRETT Examiner #: 76107 Date: 6/11/2005  
 Art Unit: 1774 Phone Number 30 2-1523 Serial Number: 10/786,372  
 Mail Box and Bldg/Rm Location: Rensselaer 10C79 Results Format Preferred (circle): PAPER DISK E-MAIL

If more than one search is submitted, please prioritize searches in order of need.

Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched. Include the elected species or structures, keywords, synonyms, acronyms, and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc., if known. Please attach a copy of the cover sheet, pertinent claims, and abstract.

Title of Invention: Electroluminescent Device Having Conjugated Arylamine Polymers  
 Inventors (please provide full names): SHIYING ZHENG, KATHLEEN VAETH, QUANG PHAN

Earliest Priority Filing Date: 2/25/2004

\*For Sequence Searches Only\* Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number.

Please search the described arylamine-containing polymer  
 wherein each of Ar, Ar<sub>1</sub>, Ar<sub>2</sub>, Ar<sub>3</sub> and Ar<sub>4</sub> are phenyl group

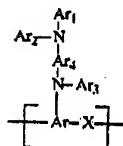
An electroluminescent device, comprising:

- a) a spaced-apart anode and cathode; and
- b) an organic layer disposed between the spaced-apart anode and cathode and including a polymer having arylamine repeating unit moiety represented by formula

SCIENTIFIC REFERENCE BR  
 Sci & Tech Inf. Ctr

JUN 14 REC'D

Pat. & T.M. Office



wherein:

Ar, Ar<sub>1</sub>, Ar<sub>2</sub>, Ar<sub>3</sub>, and Ar<sub>4</sub> are each individually aryl group of from 6 to 60 carbon atoms; or a heteroaryl group of from 4 to 60 carbons, or combinations thereof; or Ar<sub>1</sub> and Ar<sub>2</sub>, Ar<sub>3</sub> and Ar<sub>4</sub>, Ar<sub>1</sub> and Ar<sub>4</sub>, Ar<sub>2</sub> and Ar<sub>3</sub> are connected through a chemical bond; and

X is a conjugated group having 2 to 60 carbon atoms.

\*\*\*\*\*  
**STAFF USE ONLY**Searcher: Usha

## Type of Search

Vendors and cost where applicable

NA Sequence (#)

STN 81605-83

AA Sequence (#)

Dialog \_\_\_\_\_

Structure (#)

Questel/Orbit \_\_\_\_\_

Bibliographic

Dr.Link \_\_\_\_\_

Litigation

Lexis/Nexis \_\_\_\_\_

Fulltext

Sequence Systems \_\_\_\_\_

Patent Family

WWW/Internet \_\_\_\_\_

Other

Other (specify) \_\_\_\_\_

=> fil reg

FILE 'REGISTRY' ENTERED AT 14:30:06 ON 23 JUN 2005

=> d his ful

FILE 'LREGISTRY' ENTERED AT 13:19:28 ON 23 JUN 2005

L1 STR

FILE 'REGISTRY' ENTERED AT 13:21:03 ON 23 JUN 2005

L2 2 SEA SSS SAM L1

L3 SCR 1842

L4 SCR 1610

L5 50 SEA SSS SAM L1 AND L3 AND L4

D QUE STAT L5

L6 STR L1

L7 SCR 2043

L8 2 SEA SSS SAM L6 AND L7

D SCAN

D QUE STAT L8

FILE 'REGISTRY' ENTERED AT 13:50:46 ON 23 JUN 2005

L9 487 SEA SSS FUL L6 AND L7

SAV L9 GAR372/A

FILE 'HCAPLUS' ENTERED AT 13:52:37 ON 23 JUN 2005

L10 315 SEA ABB=ON PLU=ON L9

L11 186 SEA ABB=ON PLU=ON L10 (L) DEV/RL

L12 186 SEA ABB=ON PLU=ON L11 AND (?LUMINES? OR LUMIN? OR  
?LIGHT? OR ?EMIT? OR OLED? OR LED? OR EL? OR OEL?)

L13 162 SEA ABB=ON PLU=ON L11(L) (?LUMINES? OR LUMIN? OR  
?LIGHT? OR ?EMIT? OR OLED? OR LED? OR EL? OR OEL?)

L14 56 SEA ABB=ON PLU=ON L13 (L) PREP/RL

FILE 'REGISTRY' ENTERED AT 14:09:36 ON 23 JUN 2005

L15 STR

L16 3 SEA SUB=L9 SSS SAM L15

D SCAN

L17 STR

L18 4 SEA SUB=L9 SSS SAM L17

L19 73 SEA SUB=L9 SSS FUL L17

L20 61 SEA SUB=L9 SSS FUL L15

FILE 'HCAPLUS' ENTERED AT 14:18:49 ON 23 JUN 2005

L21 92 SEA ABB=ON PLU=ON L19

L22 39 SEA ABB=ON PLU=ON L20

L23 116 SEA ABB=ON PLU=ON L21 OR L22

L24 68 SEA ABB=ON PLU=ON L23 (L) DEV/RL

L25 51 SEA ABB=ON PLU=ON L24 (L) (?LUMINES? OR LUMIN? OR  
?LIGHT? OR ?EMIT? OR OLED? OR LED? OR EL? OR OEL?)

L26 41 SEA ABB=ON PLU=ON L14 NOT L25

D FHITSTR

FILE 'REGISTRY' ENTERED AT 14:30:06 ON 23 JUN 2005

FILE LREGISTRY

LREGISTRY IS A STATIC LEARNING FILE

FILE HCAPLUS

```
=> d que 123
L6          STR
      6      7
      Cb      Cb
      }      }
Cb~^ N~^ Cb~^ N
5   1   2   3
```

## NODE ATTRIBUTES:

DEFAULT MLEVEL IS ATOM  
 DEFAULT ECLEVEL IS LIMITED

## GRAPH ATTRIBUTES:

RING(S) ARE ISOLATED OR EMBEDDED  
 NUMBER OF NODES IS 6

## STEREO ATTRIBUTES: NONE

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L7          SCR 2043
L9          487 SEA FILE=REGISTRY SSS FUL L6 AND L7
L15         STR
```

```
Cb~^ Ak
1   2
```

## NODE ATTRIBUTES:

DEFAULT MLEVEL IS ATOM  
 GGCAT IS UNS AT 1  
 GGCAT IS UNS AT 2  
 DEFAULT ECLEVEL IS LIMITED

## GRAPH ATTRIBUTES:

RING(S) ARE ISOLATED OR EMBEDDED  
 NUMBER OF NODES IS 2

## STEREO ATTRIBUTES: NONE

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L17         STR
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```
      7      8
      Cb      Cb          Ak @9      Cb @10
      }      }
Cb~^ N~^ Cb~^ N~^ Cb~^ G1
1   2   3   4   5   6
```

VAR G1=9/10

NODE ATTRIBUTES:  
 DEFAULT MLEVEL IS ATOM  
 GGCAT IS UNS AT 9  
 GGCAT IS UNS AT 10  
 DEFAULT ECLEVEL IS LIMITED

## GRAPH ATTRIBUTES:

RING(S) ARE ISOLATED OR EMBEDDED  
 NUMBER OF NODES IS 10

## STEREO ATTRIBUTES: NONE

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L19          73 SEA FILE=REGISTRY SUB=L9 SSS FUL L17
L20          61 SEA FILE=REGISTRY SUB=L9 SSS FUL L15
L21          92 SEA FILE=HCAPLUS ABB=ON PLU=ON L19
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L22            39 SEA FILE=HCAPLUS ABB=ON PLU=ON L20  
 L23            116 SEA FILE=HCAPLUS ABB=ON PLU=ON L21 OR L22

=> fil hcap  
 FILE 'HCAPLUS' ENTERED AT 14:31:19 ON 23 JUN 2005  
 USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.  
 PLEASE SEE "HELP USAGETERMS" FOR DETAILS.  
 COPYRIGHT (C) 2005 AMERICAN CHEMICAL SOCIETY (ACS)

=> d 125 1-51 ibib abs hitstr hitind

L25 ANSWER 1 OF 51 HCAPLUS COPYRIGHT 2005 ACS on STN  
 ACCESSION NUMBER: 2005:472108 HCAPLUS  
 TITLE: Preparation of crosslinkable substituted  
       fluorene compound-based polymers for  
       electroluminescent devices  
 INVENTOR(S): Inbasekaran, Michael; Yu, Wanglin  
 PATENT ASSIGNEE(S): Dow Global Technologies Inc., USA  
 SOURCE: PCT Int. Appl., 23 pp.  
 CODEN: PIXXD2  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 2  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
-----	----	-----	-----	-----
WO 2005049548	A1	20050602	WO 2004-US36075	
				2004
				1025

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ,  
 CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG,  
 ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP,  
 KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD,  
 MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL,  
 PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR,  
 TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW  
 RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM,  
 ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH,  
 CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU,  
 MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI,  
 CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

PRIORITY APPLN. INFO.: US 2003-520597P P  
 2003  
 1117

AB The present invention relates to novel 2, 7-di(arylarnino)-  
 substituted fluorenes that are further substituted at the  
 9-position with  $\geq 1$  crosslinkable moieties and oligomers or  
 polymers formed by crosslinking of said crosslinkable moieties  
 used in forming solvent resistant films having use as interlayers  
 in electronic devices, especially electroluminescent devices. Thus, 9 g  
 2,7-dibromofluorenone and 25 mL anisole were reacted in the  
 presence of methanesulfonic acid and mercaptoacetic acid, 6.0 g of  
 the resulting 2,7-dibromo-9,9-di(4-methoxyphenyl)fluorene was  
 reacted with 5.68 g diphenylamine in the presence of palladium  
 acetate, tri-o-tolylphosphine, and potassium tert-butoxide,

treated with boron tribromide, etherified with 4-vinylbenzyl chloride to give 9,9-di[4-(4-vinylphenyl)methoxyphenyl]-2,7-bis(diphenylamino)-fluorene, 5% solution of which was spin-coated on a glass substrate, and heated at 180° for 30 min to give a xylene-insol. film emitting blue light under an UV-lamp, which was fabricated into a light emitting device as a hole-transport layer material, showing brightness 4000 cd/m<sup>2</sup> at 12 V.

IT 852691-97-5P  
 (optionally blend with polyamine; preparation of crosslinkable substituted fluorene compound-based polymers for electroluminescent devices)

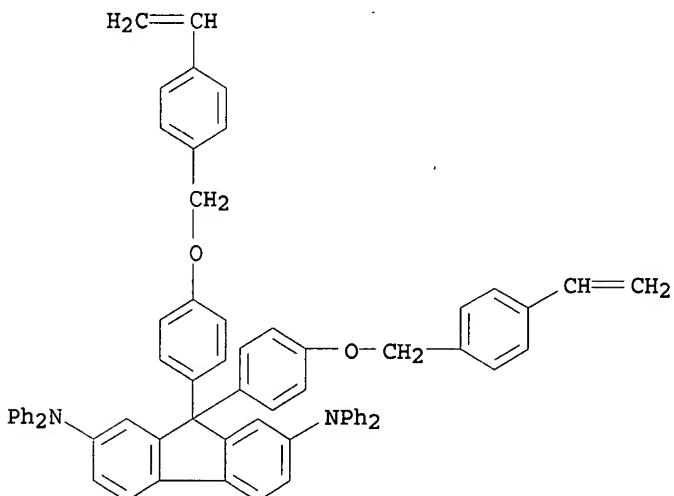
RN 852691-97-5 HCAPLUS

CN INDEX NAME NOT YET ASSIGNED

CM 1

CRN 852691-96-4

CMF C67 H52 N2 O2



IC ICM C07C217-94

ICS C08G061-02; H05B033-14; H01L051-30

CC 38-3 (Plastics Fabrication and Uses)

Section cross-reference(s): 73, 35

IT 852691-97-5P

(optionally blend with polyamine; preparation of crosslinkable substituted fluorene compound-based polymers for electroluminescent devices)

REFERENCE COUNT: 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L25 ANSWER 2 OF 51 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2005:450032 HCAPLUS

DOCUMENT NUMBER: 142:490343

TITLE: Electrophotographic apparatus, photoreceptors therefor, process cartridges therewith, and method for forming high-quality sharp images thereby

INVENTOR(S) : Shibata, Toyoko; Sakimura, Tomoko; Yamazaki, Hiroshi; Asano, Masao  
 PATENT ASSIGNEE(S) : Konica Minolta Business Technologies, Inc., Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 112 pp.  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

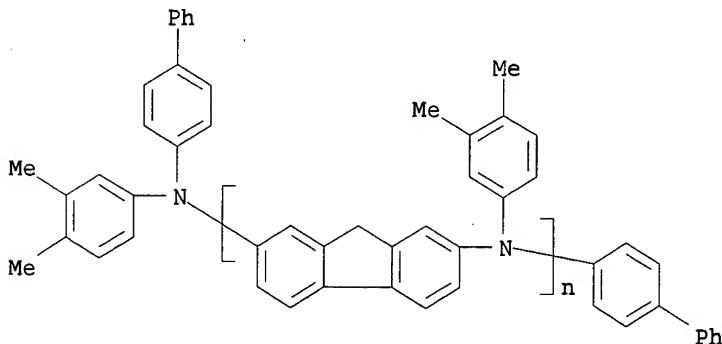
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2005134514	A2	20050526	JP 2003-368608	2003 1029
PRIORITY APPLN. INFO.:			JP 2003-368608	2003 1029

AB The photoreceptors contain (A) crosslinked siloxanes (containing other polymers, antioxidants, and/or charge-transporting components) and (B) X(CTM)<sub>n</sub>Y mixts. (CTM = charge-transporting group; X, Y = H, halo, monovalent organic group; n = 0-10; with the proviso that when X = Y = H, n = 1-10) with x + y ≤ 99% (x, y = concentration of the maximum and the 2nd maximum components, resp.). Photoreceptors having charge-generating layers on conductive supports, B-containing charge-transporting layers thereon, and A-containing surface layers are also claimed. In process cartridges, the photoreceptors are held together with chargers, imagers, developers, transfer means, charge removers, and/or cleaning means.

IT 851957-25-0P  
 (oligomers, charge transporters; electrophotog.  
 photoreceptors containing charge-transporting oligomers and  
 crosslinked siloxanes for forming high-quality sharp images)

RN 851957-25-0 HCPLUS

CN Poly[[(3,4-dimethylphenyl)imino]-9H-fluorene-2,7-diyl],  
 α-[1,1'-biphenyl]-4-yl-ω-[1,1'-biphenyl]-4-yl(3,4-  
 dimethylphenyl)amino] - (9CI) (CA INDEX NAME)



IC ICM G03G005-07  
 ICS G03G005-05; G03G005-147  
 CC 74-3 (Radiation Chemistry, Photochemistry, and Photographic and

## Other Reprographic Processes)

Section cross-reference(s): 38

IT 591-50-4DP, Iodobenzene, reaction products with  
 m-diiodobenzene-2,4-dimethylaniline copolymer 27329-60-8DP,  
 Diethyl diphenylmethylphosphonate, reaction products with  
 dialdehyde-diphosphonate copolymer 31391-52-3DP, Iodobiphenyl,  
 reaction products with bis(4-bromophenyl) ether-3,4-  
 dimethylaniline copolymer 58922-31-9DP, reaction products with  
 dialdehyde-diphosphonate copolymer 91861-56-2DP, reaction  
 products with dialdehyde-diphosphonate copolymer 94788-29-1DP,  
 reaction products with dialdehyde-diphosphonate copolymer  
 208043-04-3DP, reaction products with dialdehyde-diphosphonate  
 copolymer 313242-56-7DP, reaction products with di-Et  
 3-phenyl-2-propenylphosphonate 767335-98-8DP, reaction products  
 with di-Et diphenylmethylphosphonate 767336-00-5DP, reaction  
 products with 2,4-dimethyl-4'-formyltriphenylamine 767336-02-7P  
 767336-04-9P 767336-05-0P 851957-25-0P  
 851957-27-2DP, reaction products with iodobenzene 851957-28-3DP,  
 reaction products with iodobiphenyl 851957-29-4P  
 (oligomers, charge transporters; electrophotog.  
 photoreceptors containing charge-transporting oligomers and  
 crosslinked siloxanes for forming high-quality sharp images)

L25 ANSWER 3 OF 51 HCPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2005:429235 HCPLUS

DOCUMENT NUMBER: 142:490132

TITLE: Crosslinked polymer blends that include a  
 luminescent polymer, and devices incorporating  
 same

INVENTOR(S): Casasanta, Vincenzo; Lonergan, Timothy M.

PATENT ASSIGNEE(S): USA

SOURCE: U.S. Pat. Appl. Publ., 21 pp.

CODEN: USXXCO

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 5

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
-----	----	-----	-----	-----
US 2005106417	A1	20050519	US 2003-714837	2003 1114
WO 2005049680	A2	20050602	WO 2004-US37885	2004 1112

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ,  
 CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG,  
 ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP,  
 KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD,  
 MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL,  
 PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR,  
 TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW

RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM,  
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 CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT,  
 LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG,  
 CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

PRIORITY APPLN. INFO.: US 2003-713469 A

2003  
1114

US 2003-714266 A  
2003  
1114

US 2003-714356 A  
2003  
1114

US 2003-714387 A  
2003  
1114

US 2003-714837 A  
2003  
1114

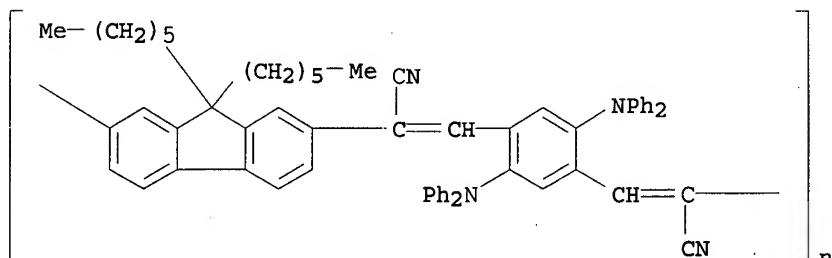
AB Crosslinked polymer blends that include a luminescent polymer.  
Also featured are devices incorporating these blends.

IT 369370-71-8

(crosslinked polymer blends that include a luminescent polymer, and devices incorporating same)

RN 369370-71-8 HCPLUS

CN Poly[(9,9-dihexyl-9H-fluorene-2,7-diyl) (1-cyano-1,2-ethenediyl) [2,5-bis(diphenylamino)-1,4-phenylene] (2-cyano-1,2-ethenediyl)] (9CI) (CA INDEX NAME)



IC ICM C09K011-06  
ICS H05B033-14

INCL 428690000; 428917000; 252301350; 313504000; 313506000

CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

Section cross-reference(s): 38

IT 369370-71-8 851745-60-3 851955-88-9  
(crosslinked polymer blends that include a luminescent polymer, and devices incorporating same)

L25 ANSWER 4 OF 51 HCPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2005:429234 HCPLUS

DOCUMENT NUMBER: 142:490131

TITLE: Process for preparing crosslinked polymer blends that include a luminescent polymer

INVENTOR(S): Casasanta, Vincenzo; Lonergan, Timothy M.

PATENT ASSIGNEE(S): USA

SOURCE: U.S. Pat. Appl. Publ., 20 pp.

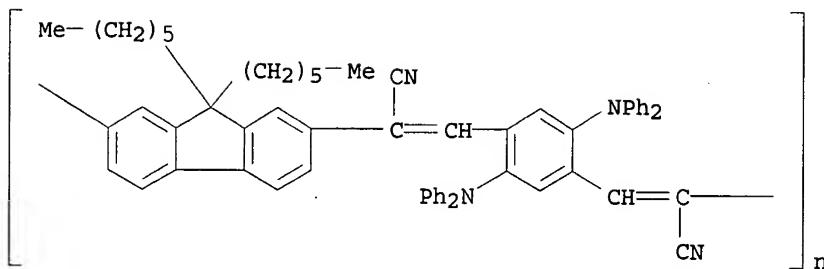
CODEN: USXXCO  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 5  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2005106416	A1	20050519	US 2003-714266	2003 1114
WO 2005049680	A2	20050602	WO 2004-US37885	2004 1112

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ,  
 CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG,  
 ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP,  
 KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD,  
 MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL,  
 PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR,  
 TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW  
 RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM,  
 ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH,  
 CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT,  
 LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG,  
 CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

PRIORITY APPLN. INFO.:	US 2003-713469	A
		2003 1114
	US 2003-714266	A
		2003 1114
	US 2003-714356	A
		2003 1114
	US 2003-714387	A
		2003 1114
	US 2003-714837	A
		2003 1114

AB A process comprising (a) providing a polymer blend comprising a luminescent polymer and a 2nd polymer, where at least one of the polymers is crosslinkable, and (b) crosslinking the crosslinkable polymer.  
 IT 369370-71-8  
 (process for preparing crosslinked polymer blends that include a luminescent polymer)  
 RN 369370-71-8 HCPLUS  
 CN Poly[(9,9-dihexyl-9H-fluorene-2,7-diyl)(1-cyano-1,2-ethenediyl)[2,5-bis(diphenylamino)-1,4-phenylene](2-cyano-1,2-ethenediyl)] (9CI) (CA INDEX NAME)



IC ICM C09K011-06  
ICS C09K011-02

INCL 428690000; 428917000; 252301350; 252301160

CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

Section cross-reference(s): 38

IT 369370-71-8 851745-60-3 851955-88-9  
(process for preparing crosslinked polymer blends that include a luminescent polymer)

L25 ANSWER 5 OF 51 HCPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2005:223645 HCPLUS

DOCUMENT NUMBER: 142:473478

TITLE: Morphological and electronic consequences of modifications to the polymer anode 'PEDOT:PSS'

AUTHOR(S): Snaith, Henry J.; Kenrick, Henry; Chiesa, Marco; Friend, Richard H.

CORPORATE SOURCE: Cavendish Laboratory, Cambridge, CB3 0HE, UK

SOURCE: Polymer (2005), 46(8), 2573-2578

CODEN: POLMAG; ISSN: 0032-3861

PUBLISHER: Elsevier Ltd.

DOCUMENT TYPE: Journal

LANGUAGE: English

AB We present a microscopic and electronic investigation of the polymeric anode poly(3,4-ethylenedioxythiophene):poly(styrenesulfonate) (PEDOT:PSS) used as an electrode in photovoltaic and single carrier diodes. PEDOT:PSS is processed from aqueous solution as a colloidal dispersion with excess PSS present. We modify the PEDOT:PSS solution by the addition of a high b.p. alc., glycerol, which is known to increase the conductivity of the spin-coated film. Atomic force microscopy indicates swelling and greater aggregation of the PEDOT-rich colloidal particles found in this system.

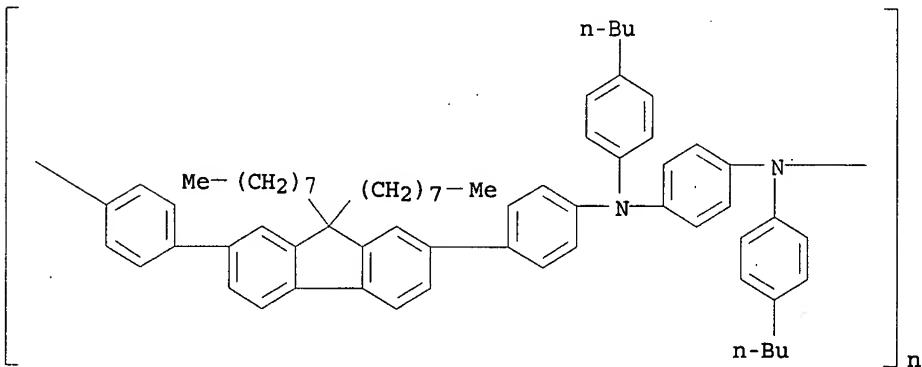
Current-voltage characteristics of hole-transporting diodes, formed with gold contacts, suggest less surface enrichment of PSS in the glycerol modified electrode. Through Kelvin probe microscopy, we find the surface potential of glycerol modified PEDOT:PSS decreases by approx. 0.12 eV, which we assign to a reduction in surface enrichment by PSS. Photovoltaic diodes, using a PFB:F8BT polymer blend as the photo-active layer, and glycerol modified PEDOT:PSS anodes are significantly improved as compared to those with unmodified PEDOT:PSS anodes. This is likely to be due to improved hole-injection from the active polymer film into the PEDOT:PSS anode. This emphasizes the electronic consequences of the morphol. reorientation of the PEDOT and PSS.

IT 223569-28-6, PFB

(hole conductor; morphol. and electronic consequences of modifications to polymer anode PEDOT:PSS)

RN 223569-28-6 HCPLUS

CN Poly[[(4-butylphenyl)imino]-1,4-phenylene[(4-butylphenyl)imino]-1,4-phenylene(9,9-dioctyl-9H-fluorene-2,7-diyl)-1,4-phenylene]  
(9CI) (CA INDEX NAME)



CC 76-3 (Electric Phenomena)  
Section cross-reference(s): 39, 52, 73

IT 223569-28-6, PFB  
(hole conductor; morphol. and electronic consequences  
of modifications to polymer anode PEDOT:PSS)

REFERENCE COUNT: 30 THERE ARE 30 CITED REFERENCES AVAILABLE  
FOR THIS RECORD. ALL CITATIONS AVAILABLE  
IN THE RE FORMAT

L25 ANSWER 6 OF 51 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2005:216255 HCAPLUS

DOCUMENT NUMBER: 142:287619

TITLE: Organic electroluminescent devices, their  
manufacture, and electronic apparatus  
therewith

INVENTOR(S): Morii, Katsuyuki; Takashima, Takeshi; Hokari,  
Hirofumi; Makiura, Rie

PATENT ASSIGNEE(S): Seiko Epson Corp., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 16 pp.  
CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

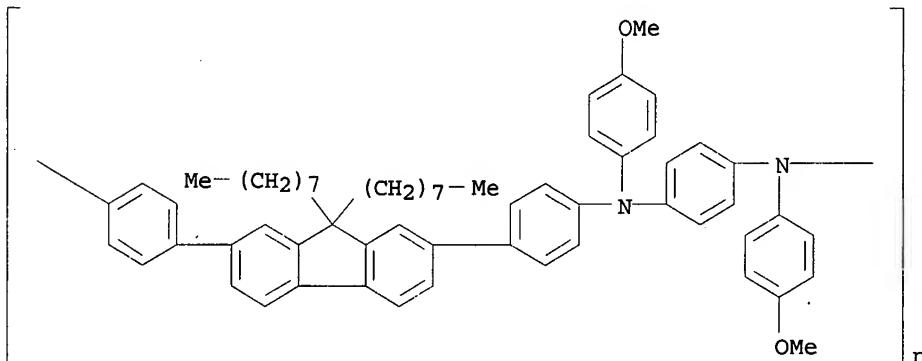
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2005063892	A2	20050310	JP 2003-295297	2003 0819
US 2005073249	A1	20050407	US 2004-916608	2004 0812
PRIORITY APPLN. INFO.:			JP 2003-295297	A 2003 0819

AB Electroluminescent devices including emitting layers wherein

emitting guest materials (A) and hole-transporting host materials (B; e.g., triphenylamine-skeletoned polymers) are mixed, are claimed. The emitting layers may contain electron-transporting materials (C). To manufacture the devices, inks containing A, B, and optionally C are discharged through ink-jet printer heads to form layers. The anodes and cathodes of the devices may be also formed by jet printing. By optimizing host-guest relationship as above, high brightness and luminescent efficiency of organic LED are both achieved.

- IT 223569-30-0  
 (emitting layers; organic LED containing  
 hole-transporting host and emitting guest in  
 emitting layers and showing high brightness)
- RN 223569-30-0 HCAPLUS
- CN Poly[[(4-methoxyphenyl)imino]-1,4-phenylene[(4-methoxyphenyl)imino]-1,4-phenylene(9,9-dioctyl-9H-fluorene-2,7-diyl)-1,4-phenylene] (9CI) (CA INDEX NAME)



- IC ICM H05B033-14  
 ICS C09K011-06; H05B033-10; H05B033-26
- CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)  
 Section cross-reference(s): 76
- IT 195456-48-5, Poly(9,9-dioctyl-9H-fluorene-2,7-diyl) 210347-52-7  
 220797-16-0 223569-30-0 847267-48-5D, alkyl derivs.  
 (emitting layers; organic LED containing  
 hole-transporting host and emitting guest in  
 emitting layers and showing high brightness)

L25 ANSWER 7 OF 51 HCAPLUS COPYRIGHT 2005 ACS on STN  
 ACCESSION NUMBER: 2005:58982 HCAPLUS  
 DOCUMENT NUMBER: 142:491232  
 TITLE: Using self-assembling dipole molecules to improve hole injection in conjugated polymers  
 AUTHOR(S): Khodabakhsh, Saghaf; Poplavskyy, Dmytro;  
 Heutz, Sandrine; Nelson, Jenny; Bradley, Donal D. C.; Murata, Hideyuki; Jones, Tim S.  
 CORPORATE SOURCE: Department of Chemistry Centre for Electronic Materials and Devices, Imperial College, London, SW7 2AZ, UK  
 SOURCE: Advanced Functional Materials (2004), 14(12), 1205-1210  
 CODEN: AFMDC6; ISSN: 1616-301X

PUBLISHER: Wiley-VCH Verlag GmbH & Co. KGaA

DOCUMENT TYPE: Journal

LANGUAGE: English

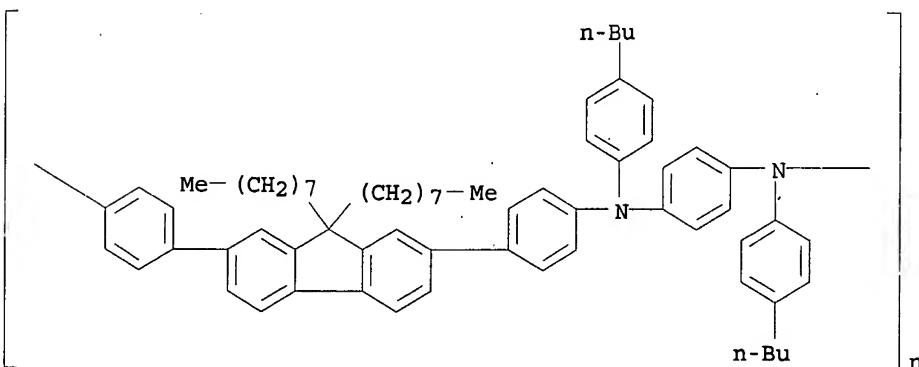
AB Surface modification of indium-tin-oxide (ITO)-coated substrates through the use of self-assembled monolayers (SAMs) of mols. with permanent dipole moment was used to control the ITO work function and device performance in polymer light-emitting diodes based on poly(9,9-dioctylfluorene-co-bis-N,N'-4-butylphenyl-bis-N,N'-phenyl-1,4-phenylenediamine) (PFB), a polyfluorene hole transporting copolymer. The SAM compds. include 4-chlorobenzoyl chloride (CBC), 4-chlorobenzenesulfonyl chloride (CBS), and 4-chlorophenyldichlorophosphate, with 4-methoxybenzoic acid (MBA) used for comparison. Measured current-voltage characteristics of the devices reveal greatly increased hole injection current from the SAM-altered electrodes with higher work function, in agreement with an expected reduction in the barrier for hole injection. In particular, the SAM-modified electrode with the highest work function provides an ohmic contact for hole injection into the polymer. Injection from the widely used poly(2,3-ethylenedioxythiophene)/polystyrenesulfonic acid (PEDOT:PSS)-coated ITO anode system, is less efficient compared with some of the studied SAM-coated ITO anodes despite the significantly higher work function measured by a Kelvin probe. This apparently anomalous situation is attributed to the inhomogeneities in the injection processes that occur over the area of the device when the PEDOT:PSS-coated ITO electrode is used.

IT 223569-28-6

(hole transport layer in LED; self-assembled permanent dipole mol. monolayer to improve hole injection of polyfluorene layer and work function of ITO in LEDs)

RN 223569-28-6 HCPLUS

CN Poly[[(4-butylphenyl)imino]-1,4-phenylene[(4-butylphenyl)imino]-1,4-phenylene(9,9-dioctyl-9H-fluorene-2,7-diyl)-1,4-phenylene] (9CI) (CA INDEX NAME)



CC 76-3 (Electric Phenomena)

Section cross-reference(s): 36, 73

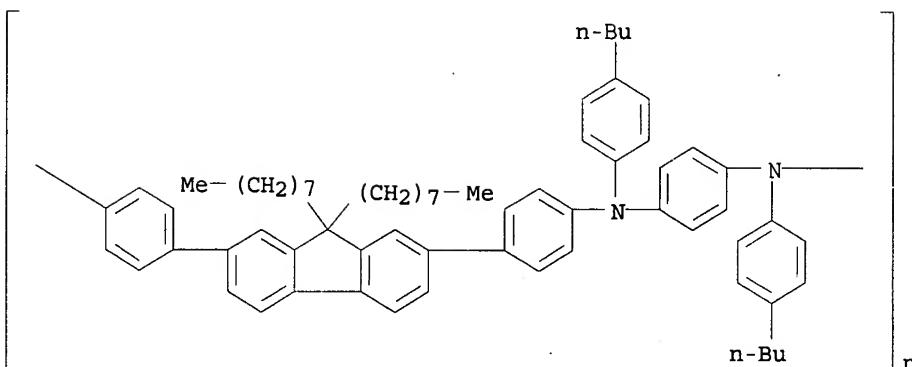
IT 223569-28-6

(hole transport layer in LED; self-assembled permanent dipole mol. monolayer to improve hole injection of polyfluorene layer and work function of ITO in LEDs)

REFERENCE COUNT: 26 THERE ARE 26 CITED REFERENCES AVAILABLE

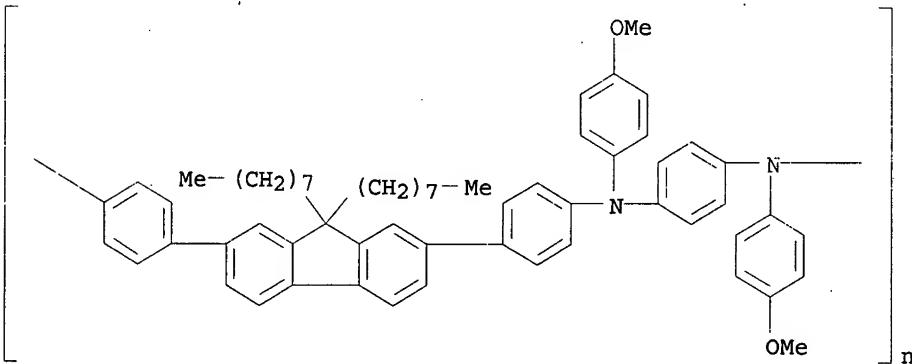
FOR THIS RECORD. ALL CITATIONS AVAILABLE  
IN THE RE FORMAT

L25 ANSWER 8 OF 51 HCPLUS COPYRIGHT 2005 ACS on STN  
 ACCESSION NUMBER: 2004:1121204 HCPLUS  
 DOCUMENT NUMBER: 142:382942  
 TITLE: Comparative measurements of charge transport  
in semiconducting polymers and their devices  
 AUTHOR(S): Rawcliffe, Ruth; Bradley, Donal D. C.;  
Campbell, Alasdair J.  
 CORPORATE SOURCE: Imperial College London, London, UK  
 SOURCE: Proceedings of SPIE-The International Society  
for Optical Engineering (2004), 5519(Organic  
Light-Emitting Materials and Devices VIII),  
89-99  
 CODEN: PSISDG; ISSN: 0277-786X  
 PUBLISHER: SPIE-The International Society for Optical  
Engineering  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 AB Semiconducting polymers can be used in light-emitting-diodes  
(LEDs), photovoltaics (PVs), and field-effect-transistors (FETs).  
In all of these devices charge carrier transport is a major issue,  
the mobility being directly related to device performance. In  
LEDs and PVs, charge transport occurs vertically through a bulk  
semiconducting polymer film. This bulk mobility is determined by the  
average interchain hopping distance  $a$ , the polaron relaxation energy  
 $\lambda$ , the level of energetic and spatial disorder  $\sigma$  and  
 $\Sigma$ , the presence of charge traps and different structural  
phases. In FETs, charge transport occurs horizontally along the  
interface between the semiconducting polymer film and the  
insulating material. The FET mobility is also determined by the above  
parameters but these may be different from the bulk. Also, there  
are addnl. factors such as surface features which have to be  
circumnavigated, specific interface trap states, and the high  
charge carrier densities effectively filling all the deep sites.  
Here we present results looking at the difference between the bulk  
mobility, as measured by time-of-flight (TOF) photocurrent, vs.  
the FET mobility, as measured by the FET transfer characteristics.  
Three different polyfluorene copolymers are investigated. In all  
three materials, the room temperature hole TOF bulk mobility was found  
to be greater than the FET mobility. This indicates that models  
based on deep site filling due to the high FET carrier densities  
cannot be correct. Temperature measurements also show that the level of  
energetic disorder  $\sigma$  in the FETs is the same or less than  
that in the bulk, as is the polaron relaxation energy  $\lambda$  or  
thermal activation energy of any deep traps. The results instead  
indicate that it is the average interchain hopping distance which is  
greater at the insulator-semiconductor interface in FETs than in  
the bulk films, and it is this which is responsible for the  
difference in mobility.  
 IT 223569-28-6 223569-30-0  
 (comparative measurements of charge transport in semiconducting  
polymers with its usage in light-emitting  
-diodes, photovoltaics and field-effect-transistors)  
 RN 223569-28-6 HCPLUS  
 CN Poly[[(4-butylphenyl)imino]-1,4-phenylene[(4-butylphenyl)imino]-  
1,4-phenylene(9,9-dioctyl-9H-fluorene-2,7-diyl)-1,4-phenylene]  
(9CI) (CA INDEX NAME)



RN 223569-30-0 HCAPLUS

CN Poly[[(4-methoxyphenyl)imino]-1,4-phenylene[(4-methoxyphenyl)imino]-1,4-phenylene(9,9-dioctyl-9H-fluorene-2,7-diyloxy)-1,4-phenylene] (9CI) (CA INDEX NAME)



CC 76-3 (Electric Phenomena)

Section cross-reference(s): 36

IT 210347-56-1 223569-28-6 223569-30-0

(comparative measurements of charge transport in semiconducting polymers with its usage in light-emitting diodes, photovoltaics and field-effect-transistors)

REFERENCE COUNT: 18 THERE ARE 18 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L25 ANSWER 9 OF 51 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2004:1024438 HCAPLUS

DOCUMENT NUMBER: 142:166545

TITLE: Photovoltaic devices fabricated from an aqueous dispersion of polyfluorene nanoparticles using an electroplating method

Snaith, Henry J.; Friend, Richard H.

CORPORATE SOURCE: Cavendish Laboratory, Cambridge, CB3 0HE, UK

SOURCE: Synthetic Metals (2004), 147(1-3), 105-109

CODEN: SYMEDZ; ISSN: 0379-6779

PUBLISHER: Elsevier B.V.

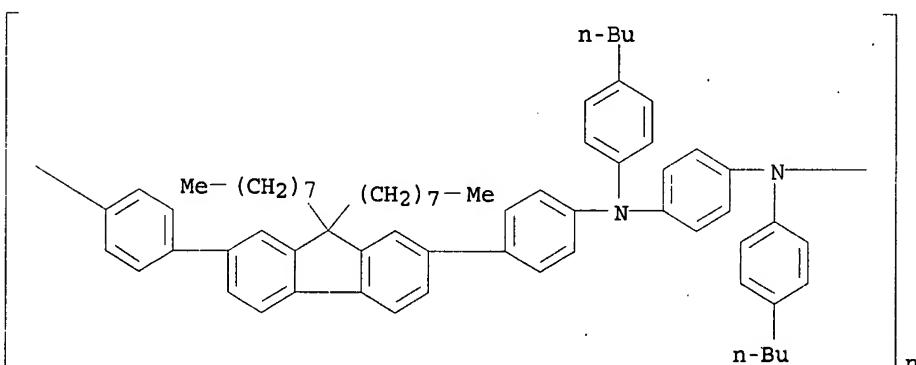
DOCUMENT TYPE: Journal  
 LANGUAGE: English

AB We report microscopic and device based anal. of thin films of polyfluorene nanoparticles. We use an electroplating technique to form a complete monolayer of polymer nanoparticles on conductive and polymer-coated substrates. We find the electroplated film to be insol. in organic solvents, and thus are able to build up multilayer structures of electroactive polymers which are originally soluble in common solvents. By spin-coating an F8BT layer from an organic solvent on top of a PFB:F8BT nanoparticle film, we form a multilayer structure. Capping with an aluminum cathode produces a photovoltaic device with substantial performance characteristics.

IT 223569-28-6, PFB  
 (photovoltaic devices fabricated from an aqueous dispersion of polyfluorene nanoparticles using an electroplating method)

RN 223569-28-6 HCPLUS

CN Poly[[(4-butylphenyl)imino]-1,4-phenylene[(4-butylphenyl)imino]-1,4-phenylene(9,9-dioctyl-9H-fluorene-2,7-diyl)-1,4-phenylene] (9CI) (CA INDEX NAME)



CC 76-5 (Electric Phenomena)  
 Section cross-reference(s): 38, 52

IT 210347-52-7, F8BT 223569-28-6, PFB  
 (photovoltaic devices fabricated from an aqueous dispersion of polyfluorene nanoparticles using an electroplating method)

REFERENCE COUNT: 15 THERE ARE 15 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L25 ANSWER 10 OF 51 HCPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2004:943091 HCPLUS

DOCUMENT NUMBER: 142:97314

TITLE: Near-Field Scanning Photocurrent Measurements of Polyfluorene Blend Devices: Directly Correlating Morphology with Current Generation

AUTHOR(S): McNeill, Christopher R.; Frohne, Holger; Holdsworth, John L.; Dastoor, Paul C.

CORPORATE SOURCE: School of Mathematical and Physical Sciences, The University of Newcastle, Callaghan, 2308, Australia

SOURCE: Nano Letters (2004), 4(12), 2503-2507  
 CODEN: NALEFD; ISSN: 1530-6984

PUBLISHER: American Chemical Society

DOCUMENT TYPE: Journal

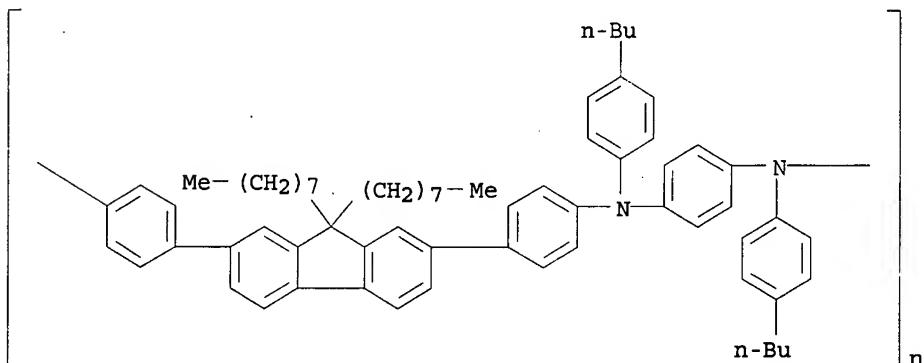
LANGUAGE: English

AB Near-field scanning photocurrent microscopy (NSPM) measurements probing the relationship between morphol. and current generation in photovoltaic devices based on poly(9,9'-dioctylfluorene-co-bis-N,N'-(4-butylphenyl)-bis-N,N'-phenyl-1,4-phenylene-diamine) [PFB] and poly(9,9'-dioctylfluorene-co-benzo-thiadiazole) [F 8BT] blend films are presented. The polymers were spin coated from p-xylene solution Current generation occurred primarily from within the micron-sized phase-segregated domains, with the PFB-rich phase contributing significantly more current than the surrounding F8BT-rich regions. These results are explained by nanoscale intermixing within the micron-sized domains, with differing extents of intermixing in the PFB- and F8BT-rich domains.

IT 223569-28-6  
 (thin film; direct correlation of film morphol. with elec. current generation from solar cells and photovoltaic cells with polyfluorene blend thin films)

RN 223569-28-6 HCPLUS

CN Poly[[(4-butylphenyl)imino]-1,4-phenylene[(4-butylphenyl)imino]-1,4-phenylene(9,9-dioctyl-9H-fluorene-2,7-diyl)-1,4-phenylene]  
 (9CI) (CA INDEX NAME)



CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)  
 Section cross-reference(s): 38

IT 210347-52-7, F 8BT 223569-28-6  
 (thin film; direct correlation of film morphol. with elec. current generation from solar cells and photovoltaic cells with polyfluorene blend thin films)

REFERENCE COUNT: 23 THERE ARE 23 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L25 ANSWER 11 OF 51 HCPLUS COPYRIGHT 2005 ACS on STN  
 ACCESSION NUMBER: 2004:857833 HCPLUS  
 DOCUMENT NUMBER: 141:340150  
 TITLE: Organic electroluminescent device and manufacturing method  
 INVENTOR(S): Hirayama, Yasuko; Sano, Takeshi; Sakakibara, Takahisa

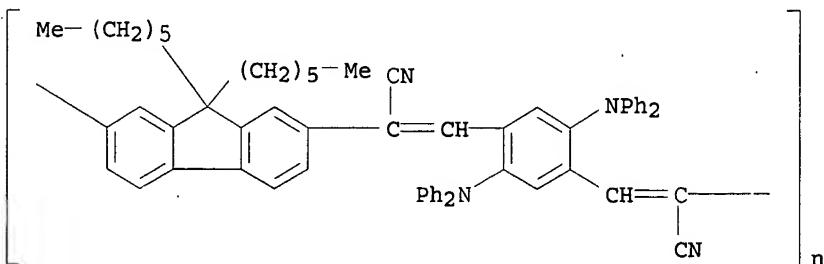
PATENT ASSIGNEE(S) : Sanyo Electric Co. Ltd., Japan  
 SOURCE: PCT Int. Appl., 75 pp.  
 CODEN: PIXXD2  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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WO 2004089043	A1	20041014	WO 2004-JP4104	2004 0324
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW RW: BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
JP 2004319440	A2	20041111	JP 2004-55397	2004 0227
JP 2004319441	A2	20041111	JP 2004-55398	2004 0227
PRIORITY APPLN. INFO.:			JP 2003-97308	A 2003 0331
			JP 2004-55397	A 2004 0227

AB An organic electroluminescent device is formed by stacking a plurality of layers, each of which is composed of a polymer material which is soluble to an organic solvent. The polymer material used for a foundation layer has a larger mol. weight than the polymer material used for a layer formed on the foundation layer. The organic solvent into which the polymer material for the foundation layer is dissolved has a larger relative dielec. constant than the organic solvent into which the polymer material for the upper layer is dissolved. When the foundation layer serves as a light-emitting layer and the upper layer serves as an electron-transporting layer, the electron-transporting layer may preferably contain a polymer material having hole-blocking properties. In such a case where the foundation layer serves as the light-emitting layer and the upper layer serves as the electron-transporting layer, it is also preferable that repeating units of the polymer material of the light-emitting layer and those of the polymer material of the electron-transporting layer have the same skeletons.

IT 369370-71-8  
 (organic electroluminescent device and manufacturing method)

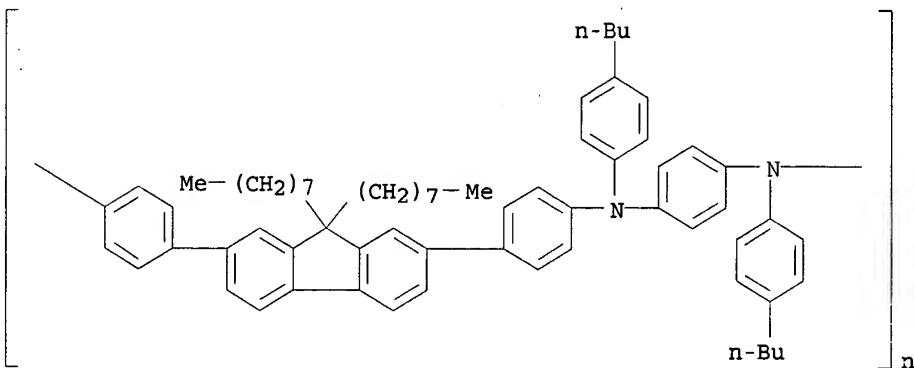
RN 369370-71-8 HCAPLUS  
 CN Poly[(9,9-dihexyl-9H-fluorene-2,7-diyl)(1-cyano-1,2-ethenediyl)[2,5-bis(diphenylamino)-1,4-phenylene](2-cyano-1,2-ethenediyl)] (9CI) (CA INDEX NAME)



IC ICM H05B033-14  
 ICS H05B033-10; H05B033-22; C09K011-06; C08L065-00  
 CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)  
 Section cross-reference(s): 38, 76  
 IT 25067-59-8 49718-51-6 126213-51-2 138184-36-8, MEH-PPV  
 195456-48-5, Poly(9,9-dioctyl-9H-fluorene-2,7-diyl) 316825-94-2  
**369370-71-8** 474975-19-4 475101-36-1 738610-65-6  
 773895-96-8 773895-97-9 773895-98-0  
 (organic electroluminescent device and manufacturing method)  
 REFERENCE COUNT: 5 THERE ARE 5 CITED REFERENCES AVAILABLE  
 FOR THIS RECORD. ALL CITATIONS AVAILABLE  
 IN THE RE FORMAT

L25 ANSWER 12 OF 51 HCAPLUS COPYRIGHT 2005 ACS on STN  
 ACCESSION NUMBER: 2004:793745 HCAPLUS  
 DOCUMENT NUMBER: 142:13573  
 TITLE: Electromodulation of photoinduced charge transfer in polyfluorene bilayer devices  
 AUTHOR(S): Dhoot, A. S.; Hogan, J. A.; Morteani, A. C.; Greenham, N. C.  
 CORPORATE SOURCE: Cavendish Laboratory, Cambridge, CB3 0HE, UK  
 SOURCE: Applied Physics Letters (2004), 85(12), 2256-2258  
 CODEN: APPLAB; ISSN: 0003-6951  
 PUBLISHER: American Institute of Physics  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 AB Photoinduced charge transfer at a conjugated polymer donor-acceptor heterojunction controls the ultimate photogeneration efficiency in photovoltaic devices. The authors have studied this charge transfer by measurements of elec.-field-induced photoluminescence (PL) modulation in polyfluorene-based bilayer devices at room and low temps. Depending on the field direction across the interface we observe field-induced quenching or enhancement of the PL, which we ascribe to modulation of the exciton dissociation rate through modification of the energy of the charge-transfer state formed after charge separation  
 IT 223569-28-6, PFB  
 (electromodulation of photoinduced charge transfer in polyfluorene bilayer devices)  
 RN 223569-28-6 HCAPLUS

CN Poly[[(4-butylphenyl)imino]-1,4-phenylene[(4-butylphenyl)imino]-1,4-phenylene(9,9-dioctyl-9H-fluorene-2,7-diyl)-1,4-phenylene] (9CI) (CA INDEX NAME)



CC 74-1 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

Section cross-reference(s): 36, 52, 73, 76

IT 210347-52-7, F8BT 223569-28-6, PFB

(electromodulation of photoinduced charge transfer in polyfluorene bilayer devices)

REFERENCE COUNT: 12 THERE ARE 12 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L25 ANSWER 13 OF 51 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2004:719315 HCAPLUS

TITLE: Polymer blend LEDs using polyfluorene copolymers and thermally cross-linked fluoropolymers

AUTHOR(S): Casasanta, Vincenzo; Londergan, Timothy; Dinu, Raluca

CORPORATE SOURCE: Lumera Corp., Bothell, WA, 98011, USA

SOURCE: Proceedings of SPIE-The International Society for Optical Engineering (2004), 5351(Organic Photonic Materials and Devices VI), 217-225

CODEN: PSISDG; ISSN: 0277-786X

PUBLISHER: SPIE-The International Society for Optical Engineering

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The use of conjugated light emitting polymers (LEPs) blended in nonconjugated matrixes offers an enhancement in electroluminescence efficiency in polymer light emitting diodes (PLEDs) since the aggregate quenching of the excited state emission is ameliorated. In such a scheme the matrix polymer may be developed to enhance the thermal, mech., and processing properties of the LEP blend as a whole. The authors produced solution processable blends of polyfluorene (PF) based copolymers with thermally crosslinkable perfluoroarylether (PFAE) polymers and tested these materials' performance as a single emissive layer in the simplest PLED structure. Specifically the authors present results of blends consisting of red poly[({9,9-dihexyl-2,7-bis(1-cyanovinylene)fluorenyl-ene})-alt-co-{2,5-bis(N,N'-diphenylamino)-

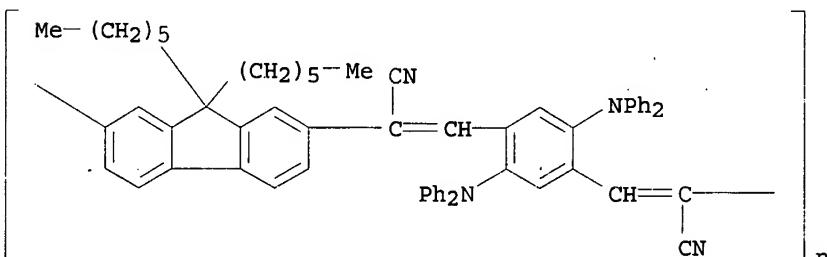
1,4-phenylene}] as the LEP and a novel PFAE which is thermally crosslinked as the matrix. The new PFAE was specifically developed for low optical loss, high glass transition temperature ( $T_g$ ), and solution process-ability. Once spun cast and thermally crosslinked, films of these polymer blends show increased solvent resistance and enhanced  $T_g$  due to the fluoropolymer matrix. Simple ITO/polymer/Al PLEDs of several concentration ratios are fabricated and tested to determine the efficacy of various matrix addns. The light-c.d.-voltage characteristics show either equivalent or enhanced efficiency depending on LEP/PFAE concentration. Blends of the PFAE and PF copolymer LEPs are patterned into 6  $\mu\text{m}$  waveguide structures using the solvent resistance afforded by the crosslinked PFAE matrix.

IT 369370-71-8

(polymer blend LEDs using polyfluorene copolymers and thermally cross-linked fluoropolymers)

RN 369370-71-8 HCPLUS

CN Poly[(9,9-dihexyl-9H-fluorene-2,7-diyl)(1-cyano-1,2-ethenediyl)[2,5-bis(diphenylamino)-1,4-phenylene](2-cyano-1,2-ethenediyl)] (9CI) (CA INDEX NAME)



CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

IT 369370-71-8 579505-60-5 851955-85-6  
(polymer blend LEDs using polyfluorene copolymers and thermally cross-linked fluoropolymers)

REFERENCE COUNT: 9 THERE ARE 9 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L25 ANSWER 14 OF 51 HCPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2004:530380 HCPLUS

DOCUMENT NUMBER: 141:96344

TITLE: Organic electroluminescent device for displays and illumination source and its production method

INVENTOR(S): Kita, Hiroshi; Yamada, Taketoshi; Suzurizato, Yoshiyuki; Ueda, Noriko

PATENT ASSIGNEE(S): Konica Minolta Holdings Inc., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 65 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.

KIND DATE

APPLICATION NO.

DATE

USHA SHRESTHA EIC 1700 REM 4B28

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JP 2004185967 A2 20040702 JP 2002-351157

2002  
1203

PRIORITY APPLN. INFO.: JP 2002-351157

2002  
1203

AB The invention relates to an organic electroluminescent device comprising a light-emitting layer containing a phosphorescent dopant and a multifunctioning polymer, wherein, at least, the two of functional mol. units selected from a luminescent host unit, a hole transporting unit, and an electron transporting unit constitute the multifunctioning polymer.

IT 714976-02-0  
(organic electroluminescent device having phosphorescent dopant and multifunctioning polymer in light emitting layer)

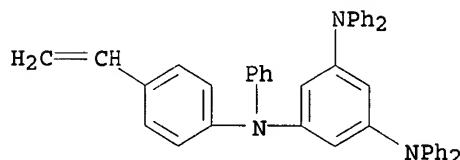
RN 714976-02-0 HCPLUS

CN 1,3,5-Benzenetriamine, N-(4-ethenylphenyl)-N,N',N'',N'''-pentaphenyl-, polymer with 9-(4-ethenylphenyl)-9H-carbazole (9CI)  
(CA INDEX NAME)

CM 1

CRN 714976-01-9

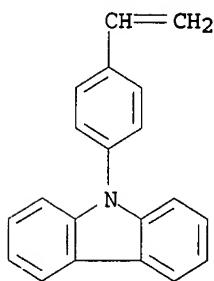
CMF C44 H35 N3



CM 2

CRN 52913-19-6

CMF C20 H15 N



IC ICM H05B033-14

ICS C08F212-00; C08F220-34; C08F226-12; C08F293-00; C08G081-00;  
C08G085-00; C09K011-06; H05B033-10

CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)  
 Section cross-reference(s) : 37, 74  
 IT 714976-00-8 714976-02-0 714976-05-3 714976-08-6  
 714976-11-1 714976-13-3 714976-16-6 714976-18-8  
 714976-21-3 714976-25-7 714976-27-9 714976-29-1  
 714976-31-5 714976-33-7 714976-35-9 714976-36-0  
 714976-38-2  
 (organic electroluminescent device having phosphorescent dopant and multifunctioning polymer in light emitting layer)

L25 ANSWER 15 OF 51 HCAPLUS COPYRIGHT 2005 ACS on STN  
 ACCESSION NUMBER: 2004:495621 HCAPLUS  
 DOCUMENT NUMBER: 141:61845  
 TITLE: Organic electroluminescence device  
 INVENTOR(S): Seki, Mieko; Yoneyama, Hiroto; Okuda, Daisuke;  
 Hirose, Eiichi; Ozaki, Tadayoshi; Agata, Takeshi; Ishii, Toru; Mashimo, Kiyokazu; Sato, Katsuhiro  
 PATENT ASSIGNEE(S): Fuji Xerox Co., Ltd., Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 116 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

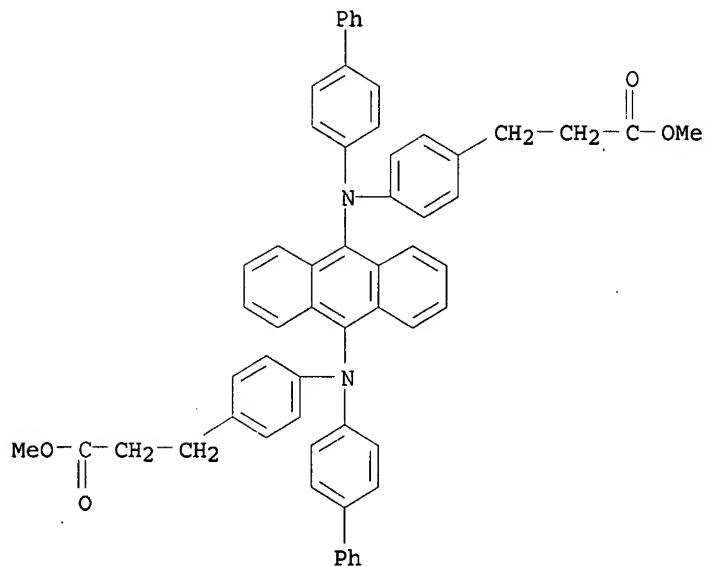
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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JP 2004171858	A2	20040617	JP 2002-334871	2002 1119
PRIORITY APPLN. INFO.:			JP 2002-334871	2002 1119

AB The invention relates to an organic electroluminescent device comprising the charge transporting polyester having the partial structure represented by -(T)l(O)n-C6H4N(Ar)X[N(Ar)C6H4]k(O)n(T)l-and -(T)l(O)n-C6H4C6H4N(Ar)X[N(Ar)C6H4C6H4]k(O)n(T)l- [Ar = Ph, 2-10 ring polynuclear aromatic, 2-10 ring condensed aromatic, etc.; X = divalent aromatic group derived from anthracene, tetracene, pyrene, etc.; k n l = 0 and 1; T = C1-6 normal chain hydrocarbons and C2-10 branched hydrocarbons].

IT 705274-71-1P 705275-35-0P  
 (charge transporting polyester for organic electroluminescence device)  
 RN 705274-71-1 HCAPLUS  
 CN Benzenepropanoic acid, 4,4'-(9,10-anthracenediylbis([1,1'-biphenyl]-4-ylimino)]bis-, dimethyl ester, polymer with 1,2-ethanediol (9CI) (CA INDEX NAME)

CM 1

CRN 705274-70-0  
 CMF C58 H48 N2 O4

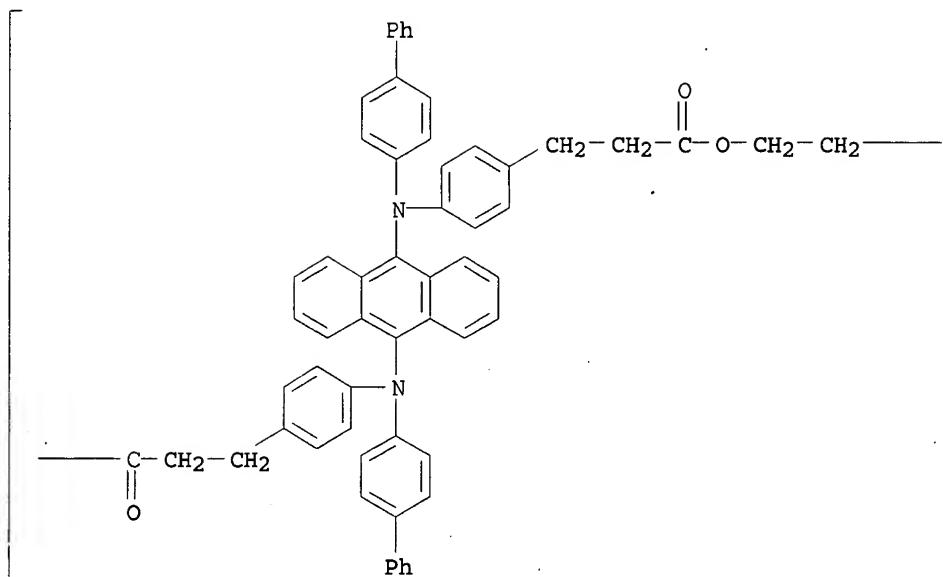


CM 2

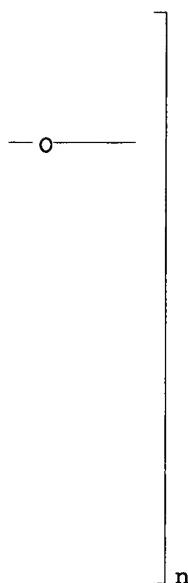
CRN 107-21-1  
CMF C2 H6 O2HO-CH<sub>2</sub>-CH<sub>2</sub>-OH

RN 705275-35-0 HCAPLUS  
 CN Poly[oxy-1,2-ethanediylloxy(1-oxo-1,3-propanediyl)-1,4-phenylene([1,1'-biphenyl]-4-ylimino)-9,10-anthracenediyl([1,1'-biphenyl]-4-ylimino)-1,4-phenylene(3-oxo-1,3-propanediyl)] (9CI)  
 (CA INDEX NAME)

PAGE 1-A



PAGE 1-B



IC ICM H05B033-14

ICS C08G063-68; H05B033-22; C09K011-06

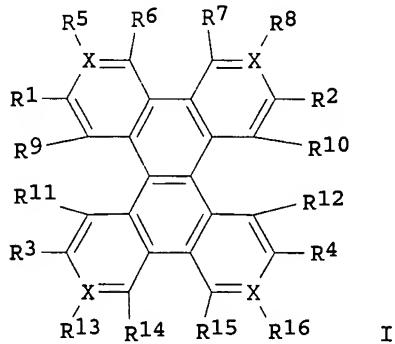
CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

Section cross-reference(s): 35  
 IT 705274-71-1P 705274-74-4P 705274-77-7P 705274-80-2P  
 705274-82-4P 705274-85-7P 705274-87-9P 705275-35-0P  
 (charge transporting polyester for organic  
 electroluminescence device)

L25 ANSWER 16 OF 51 HCAPLUS COPYRIGHT 2005 ACS on STN  
 ACCESSION NUMBER: 2004:451525 HCAPLUS  
 DOCUMENT NUMBER: 141:30834  
 TITLE: Organic light-emitting device based on  
 crosslinkable spiro-type conjugated compounds  
 INVENTOR(S): Li, Xiao-Chang Charles  
 PATENT ASSIGNEE(S): Canon Kabushiki Kaisha, Japan  
 SOURCE: U.S. Pat. Appl. Publ., 13 pp.  
 CODEN: USXXCO  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2004106004	A1	20040603	US 2002-308099	2002 1203
US 6830833	B2	20041214		
JP 2004182737	A2	20040702	JP 2003-403748	2003 1202
PRIORITY APPLN. INFO.:			US 2002-308099	A 2002 1203

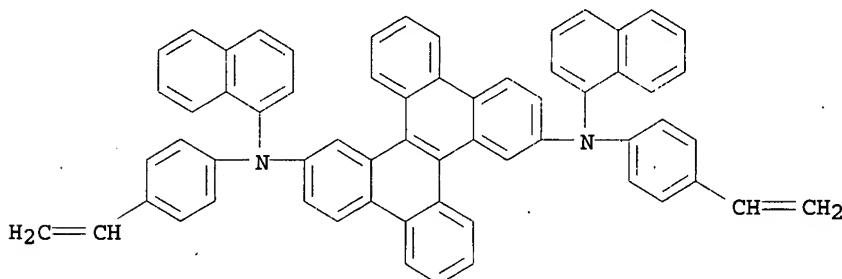
OTHER SOURCE(S): MARPAT 141:30834  
 GI



AB The title spiro-type conjugated compds. represented by general formula I ( $X = C, N$ ;  $R1-16 = H, D, \text{alkyl}, \text{alkoxy}, \text{silyl}, \text{aromatic ring}, \text{fused aromatic ring}, \text{heteroarom. ring}, \text{fused heteroarom. ring}, \text{diaryl amino}, \text{carbazole}; \text{at least one of } R1-16 \text{ is crosslinkable group consisting of vinyl double bond or azide group}$ ) are useful in the fabrication of organic light emitting devices.

IT 697763-40-9P  
 (crosslinked spiro-type conjugated compds. as hole transport  
 materials for organic light-emitting device)  
 RN 697763-40-9 HCPLUS  
 CN Dibenzo[g,p]chrysene-2,10-diamine, N,N'-bis(4-ethenylphenyl)-N,N'-  
 di-1-naphthalenyl-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 697763-39-6  
 CMF C62 H42 N2

IC ICM H05B033-14  
 ICS C09K011-06  
 INCL 428690000; 428917000; 313504000; 313506000; 546041000; 564426000;  
 564429000; 556431000; 556432000  
 CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related  
 Properties)  
 Section cross-reference(s): 24, 27, 28, 74  
 IT 697763-40-9P  
 (crosslinked spiro-type conjugated compds. as hole transport  
 materials for organic light-emitting device)  
 REFERENCE COUNT: 20 THERE ARE 20 CITED REFERENCES AVAILABLE  
 FOR THIS RECORD. ALL CITATIONS AVAILABLE  
 IN THE RE FORMAT

L25 ANSWER 17 OF 51 HCPLUS COPYRIGHT 2005 ACS on STN  
 ACCESSION NUMBER: 2004:219366 HCPLUS  
 DOCUMENT NUMBER: 140:278198  
 TITLE: Organic electroluminescent device  
 INVENTOR(S): Okuda, Daisuke; Seki, Mieko; Yoneyama, Hiroto;  
 Hirose, Eiichi; Ozaki, Tadayoshi; Agata, Takashi; Ishii, Toru; Mashimo, Kiyokazu; Sato,  
 Katsuhiro  
 PATENT ASSIGNEE(S): Fuji Xerox Co., Ltd., Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 42 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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JP 2004087372	A2	20040318	JP 2002-248676	

PRIORITY APPLN. INFO.:

JP 2002-248676

2002

0828

2002

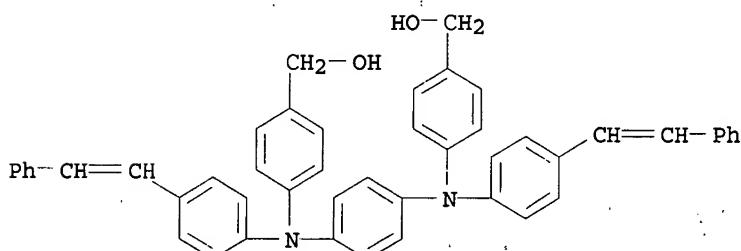
0828

- AB The invention relates to an organic electroluminescent device comprising the charge transporting polyurethane containing the partial structure represented by  $-C_6H_4-N(Ar)X[N(Ar)C_6H_4]_k-$  and  $-C_6H_4-C_6H_4-N(Ar)X[N(Ar)C_6H_4-C_6H_4]_k-$  [X = divalent aromatic group; k = 0 or 1; Ar = Ar<sub>1</sub>C(R<sub>1</sub>)=C(R<sub>2</sub>) - (-Ar<sub>2</sub>-C(R<sub>3</sub>)=C(R<sub>4</sub>)-)n-Ar<sub>3</sub>- and Ar<sub>1</sub>-C.tplbond.C-(-Ar<sub>2</sub>-C.tplbond.C-)n-Ar<sub>3</sub>- [Ar<sub>1-3</sub> = benzene ring, and 2-10 ring aromatic hydrocarbons; R<sub>1-4</sub> = H, alkyl, alkoxy, etc.; n = 0-10 integer]].
- IT 672941-56-9 672941-57-0  
(organic electroluminescent device comprising charge transporting polyurethane)
- RN 672941-56-9 HCPLUS
- CN Benzenemethanol, 4,4'-(1,4-phenylenebis[[4-(2-phenylethenyl)phenyl]imino]]bis-, polymer with 1,6-diisocyanatohexane (9CI) (CA INDEX NAME)

CM 1

CRN 672941-55-8

CMF C48 H40 N2 O2



CM 2

CRN 822-06-0

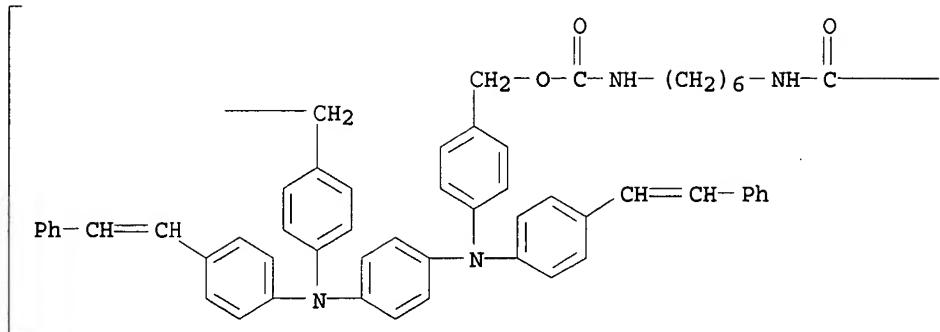
CMF C8 H12 N2 O2

OCN-(CH<sub>2</sub>)<sub>6</sub>-NCO

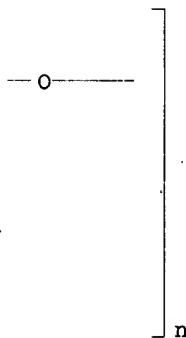
RN 672941-57-0 HCPLUS

CN Poly[oxy carbonylimino-1,6-hexanediyl iminocarbonyloxymethylene-1,4-phenylene[4-(2-phenylethenyl)phenyl]imino]-1,4-phenylene[[4-(2-phenylethenyl)phenyl]imino]-1,4-phenylenemethylene] (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 1-B



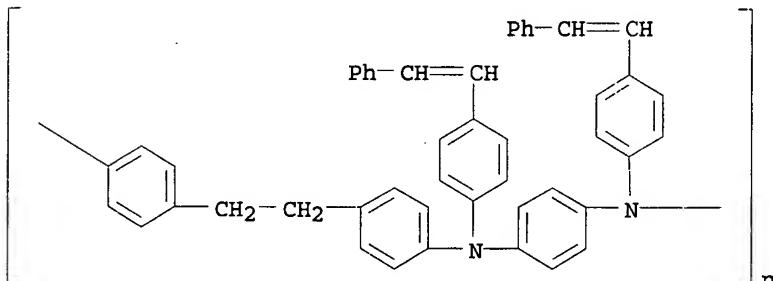
IC ICM H05B033-14  
 ICS C08G018-32; C08G018-78; C09K011-06; H05B033-22  
 CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)  
 Section cross-reference(s): 37, 74  
 IT 672941-56-9 672941-57-0 672941-59-2  
 672941-60-5 672941-62-7 672941-63-8  
 (organic electroluminescent device comprising charge transporting polyurethane)

L25 ANSWER 18 OF 51 HCPLUS COPYRIGHT 2005 ACS on STN  
 ACCESSION NUMBER: 2004:77079 HCPLUS  
 DOCUMENT NUMBER: 140:136192  
 TITLE: Organic electroluminescent device  
 INVENTOR(S): Hirose, Eiichi; Yoneyama, Hiroto; Okuda, Daisuke; Seki, Mieko; Ozaki, Tadayoshi; Agata, Takashi; Ishii, Toru; Mashimo, Kiyokazu; Sato, Katsuhiro  
 PATENT ASSIGNEE(S): Fuji Xerox Co., Ltd., Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 47 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1

## PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2004030942	A2	20040129	JP 2002-181030	2002 0621
PRIORITY APPLN. INFO.:			JP 2002-181030	2002 0621

- AB The invention relates to an organic electroluminescent device comprising the charge transporting polyether represented by R-O-[A-O]p-R, [R = H, alkyl, aryl, and aralkyl; A = -TmC6H4N(Ar)X[N(Ar)C6H4]kTm- and -TmC6H4-C6H4N(Ar)X[N(Ar)C6H4-C6H4]kTm- [X = phenylene, monovalent polycyclic aroms., monovalent condensed aromatic hydrocarbon, and monovalent aromatic heterocyclic; T = divalent hydrocarbon chain (C1-6), and divalent branched hydrocarbon (C2-10); m = 0-3 integer, k = 0 or 1; Ar = Ar1R1C:C(R3)[Ar2C(R3):C(R4)]nAr3- and Ar1CC[Ar2CC]n-Ar3- [Ar1 = Ph, monovalent polycyclic aroms. hydrocarbon, etc.; Ar2-4 = phenylene, divalent polycyclic aromatic hydrocarbon, etc.; and R1-4 = H, alkyl, cyano, etc.; n = 0-10 integer]]; p = 5-5,000 integer].
- IT 651048-26-9 651048-29-2 651048-30-5  
(charge transporting material for organic electroluminescent device)
- RN 651048-26-9 HCPLUS
- CN Poly[[[4-(2-phenylethenyl)phenyl]imino]-1,4-phenylene[[4-(2-phenylethenyl)phenyl]imino]-1,4-phenylene-1,2-ethanediyl-1,4-phenylene] (9CI) (CA INDEX NAME)

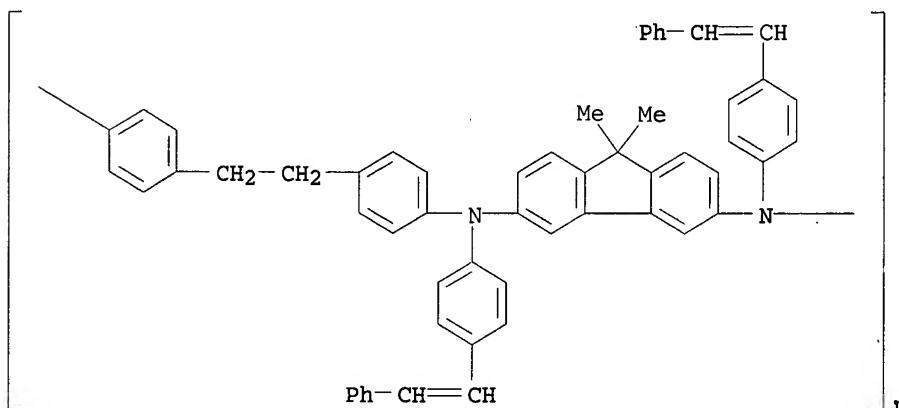


- RN 651048-29-2 HCPLUS
- CN Poly[[[4-(2-phenylethenyl)phenyl]imino]-1,4-naphthalenediyl[[4-(2-phenylethenyl)phenyl]imino]-1,4-phenylene-1,2-ethanediyl-1,4-phenylene] (9CI) (CA INDEX NAME)

\* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT  
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\* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT

\*  
 RN 651048-30-5 HCAPLUS  
 CN Poly[[[4-(2-phenylethenyl)phenyl]imino](9,9-dimethyl-9H-fluorene-3,6-diyl)[[4-(2-phenylethenyl)phenyl]imino]-1,4-phenylene-1,2-ethanediyl-1,4-phenylene] (9CI) (CA INDEX NAME)



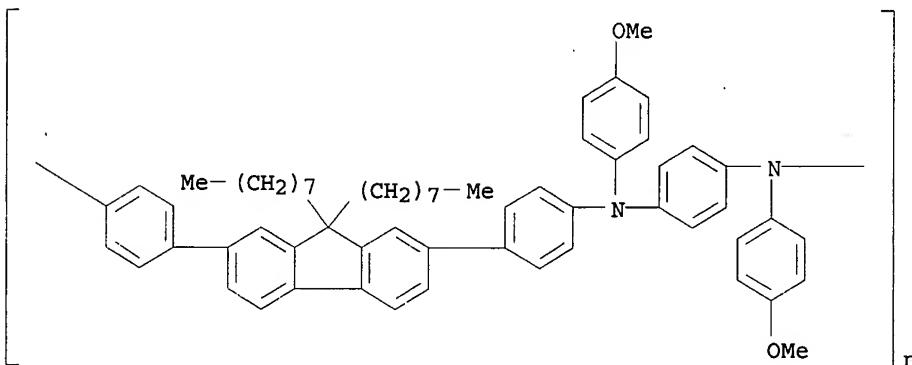
IC ICM H05B033-14  
 ICS C09K011-06; H05B033-22  
 CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)  
 Section cross-reference(s): 38  
 IT 651048-26-9 651048-27-0 651048-28-1  
 651048-29-2 651048-30-5 651048-31-6  
 651048-32-7  
 (charge transporting material for organic electroluminescent device)

L25 ANSWER 19 OF 51 HCAPLUS COPYRIGHT 2005 ACS on STN  
 ACCESSION NUMBER: 2003:988088 HCAPLUS  
 DOCUMENT NUMBER: 141:113985  
 TITLE: Inkjet printing of light-emitting polymer displays  
 AUTHOR(S): Shimoda, Tatsuya; Morii, Katsuyuki; Seki, Shunichi; Kiguchi, Hiroshi  
 CORPORATE SOURCE: Technology Platform Research Center, Seiko-Epson Corp., Fujimi-machi, Suwa-gun, Nagano-ken, 339-0293, Japan  
 SOURCE: MRS Bulletin (2003), 28(11), 821-827  
 CODEN: MRSBEA; ISSN: 0883-7694  
 PUBLISHER: Materials Research Society  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English

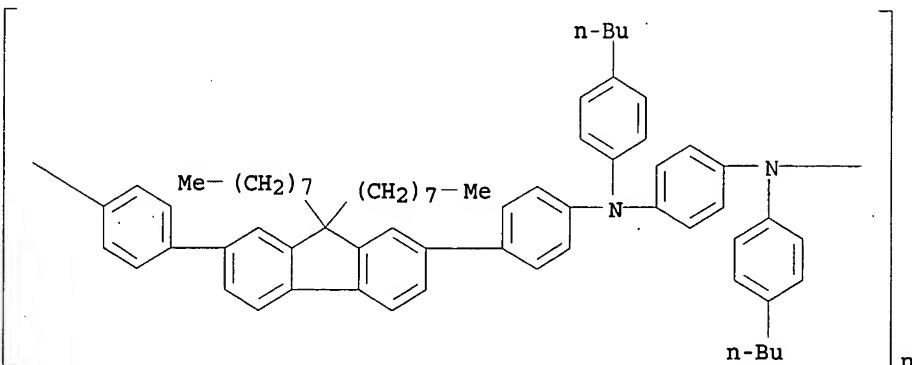
AB Based on the concept of a microliquid process, we have developed an organic electroluminescent display using conductive polymers, including light-emitting polymers. The technol. of inkjet printing has progressed enough to be used for the microliquid process. First, we describe the process used to form a patterned thin film. This involves inkjet-related technologies, the self-patterning behavior of a microliquid on the substrate, and the drying process that defines the thickness profile and film properties. Some microliquid behaviors and related phenomena, along with properties of the resulting film, were identified as

distinct from those coming from a macroscopic liquid, as a result of size effects. By fully utilizing these unique properties of microliquids, we have succeeded in fabricating color-pixel arrays by direct patterning of polymer solns. As a result, an organic electroluminescent display with a vivid full-color image was developed.

- IT 223569-30-0  
 (PFMO; inkjet printing of light-emitting polymer displays)
- RN 223569-30-0 HCAPLUS
- CN Poly[[(4-methoxyphenyl)imino]-1,4-phenylene[(4-methoxyphenyl)imino]-1,4-phenylene(9,9-dioctyl-9H-fluorene-2,7-diyl)-1,4-phenylene] (9CI) (CA INDEX NAME)



- IT 223569-28-6  
 (TFB; inkjet printing of light-emitting polymer displays)
- RN 223569-28-6 HCAPLUS
- CN Poly[[(4-butylphenyl)imino]-1,4-phenylene[(4-butylphenyl)imino]-1,4-phenylene(9,9-dioctyl-9H-fluorene-2,7-diyl)-1,4-phenylene] (9CI) (CA INDEX NAME)



- CC 74-13 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)  
 Section cross-reference(s): 38, 76
- IT 223569-30-0

(PFMO; inkjet printing of light-emitting polymer displays)

IT 223569-28-6  
 (TFB; inkjet printing of light-emitting polymer displays)

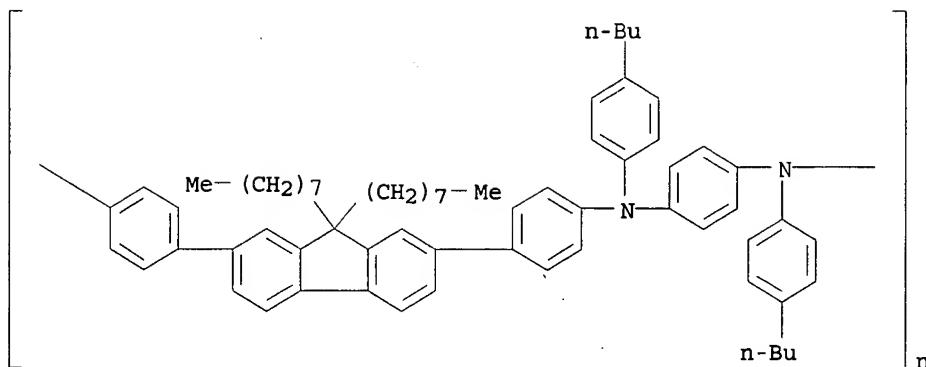
REFERENCE COUNT: 10 THERE ARE 10 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L25 ANSWER 20 OF 51 HCPLUS COPYRIGHT 2005 ACS on STN  
 ACCESSION NUMBER: 2003:894763 HCPLUS  
 DOCUMENT NUMBER: 140:136062  
 TITLE: Barrier-free electron-hole capture in polymer blend heterojunction light-emitting diodes  
 AUTHOR(S): Morteani, Arne C.; Dhoot, Anoop S.; Kim, Ji-seon; Silva, Carlos; Greenham, Neil C.; Murphy, Craig; Moons, Ellen; Cina, Salvatore; Burroughes, Jeremy H.; Friend, Richard H.  
 CORPORATE SOURCE: Cavendish Laboratory, University of Cambridge, Cambridge, CB3 0HE, UK  
 SOURCE: Advanced Materials (Weinheim, Germany) (2003), 15(20), 1708-1712  
 CODEN: ADVMEW; ISSN: 0935-9648  
 PUBLISHER: Wiley-VCH Verlag GmbH & Co. KGaA  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English

AB A new mechanism in heterojunction light-emitting diodes (LEDs), called reverse photo-induced charge transfer, allows barrier-free electron-hole capture, giving low voltage, high efficiency operation of polymer blend diodes. The trapping of the exciton at the heterojunction to form a spectroscopically distinct state provides direct evidence for this process. Electrons and holes are confined to the electron- and hole-transporting semiconductors, resp., and that this is desirable for long-lived device operation. These device structures and device operation mechanisms allow efficient LEDs to be processed conveniently. This novel mechanism was applied to evaluate the properties of 2 different type II heterojunction systems: blends of poly(9,9'-dioctylfluorene-co-N-(4-butylphenyl)diphenylamine) with poly(9,9'-dioctylfluorene-co-benzothiadiazole) (F8BT) and blends of poly(9,9'-dioctylfluorene-co-bis-N,N'-(4-butylphenyl)-bis-N,N'-phenyl-1,4-phenylenediamine) with F8BT.

IT 223569-28-6  
 (barrier-free electron-hole capture in polymer blend heterojunction LEDs containing)

RN 223569-28-6 HCPLUS  
 CN Poly[[(4-butylphenyl)imino]-1,4-phenylene[(4-butylphenyl)imino]-1,4-phenylene(9,9-dioctyl-9H-fluorene-2,7-diyl)-1,4-phenylene] (9CI) (CA INDEX NAME)



CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

Section cross-reference(s): 38, 76

IT 210347-52-7, Poly(9,9'-dioctylfluorene-co-benzothiadiazole)  
220797-16-0 223569-28-6

(barrier-free electron-hole capture in polymer blend  
heterojunction LEDs containing)

REFERENCE COUNT: 31 THERE ARE 31 CITED REFERENCES AVAILABLE  
FOR THIS RECORD. ALL CITATIONS AVAILABLE  
IN THE RE FORMAT

L25 ANSWER 21 OF 51 HCPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2003:756523 HCPLUS

DOCUMENT NUMBER: 140:33370

TITLE: Photochemical patterning approaches for  
multicolor polymer light emitting devices

AUTHOR(S): Pogantsch, A.; Trattnig, G.; Rentenberger, S.;  
Langer, G.; Keplinger, J.; Tillmann, H.;  
Hoerhold, H.-H.; Scherf, U.; Kern, W.; Zojer,  
E.

CORPORATE SOURCE: Institute of Solid State Physics, Graz  
University of Technology, Graz, A-8010,  
Austria

SOURCE: Materials Research Society Symposium  
Proceedings (2003), 771(Organic and Polymeric  
Materials and Devices), 307-312  
CODEN: MRSPDH; ISSN: 0272-9172

PUBLISHER: Materials Research Society

DOCUMENT TYPE: Journal

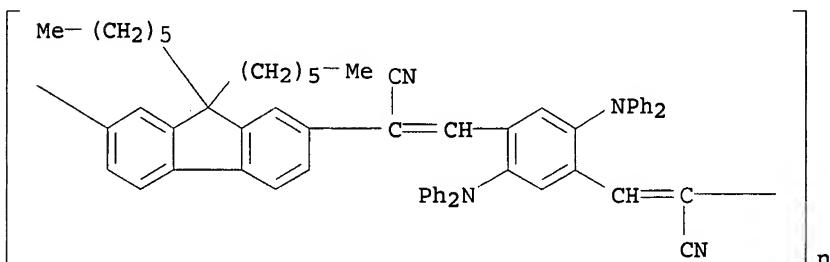
LANGUAGE: English

AB The patterning of conjugated polymers for multicolored  
electroluminescence applications is a current topic of research in  
polymer device technol. Several techniques including direct  
writing approaches such as ink-jet printing may solve this  
challenge. The authors present an approach to tuning the  
(electro)luminescence color of a film consisting of a blend of  
conjugated polymers after its deposition by UV-irradiation in the  
presence of an active agent. This promises to be an alternative,  
highly parallel approach towards multicolored electroluminescence.

IT 369370-71-8  
(photochem. patterning approaches for multicolor polymer  
light emitting devices)

RN 369370-71-8 HCPLUS

CN Poly[(9,9-dihexyl-9H-fluorene-2,7-diyl)(1-cyano-1,2-ethenediyl)[2,5-bis(diphenylamino)-1,4-phenylene](2-cyano-1,2-ethenediyl)] (9CI) (CA INDEX NAME)



CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

IT 123864-00-6, 9,9-Di(octyl)fluorene homopolymer 138184-36-8, MEH  
PPV 188201-14-1 369370-71-8 475101-36-1  
(photochem. patterning approaches for multicolor polymer light emitting devices)

REFERENCE COUNT: 18 THERE ARE 18 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L25 ANSWER 22 OF 51 HCPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2003:715941 HCPLUS

DOCUMENT NUMBER: 139:252274

TITLE: Organic electroluminescent device comprising electron transporting polyether

INVENTOR(S): Hirose, Eiichi; Seki, Mieko; Yoneyama, Hiroto; Okuda, Daisuke; Ozaki, Tadayoshi; Agata, Takashi; Ishii, Toru; Mashimo, Kiyokazu; Sato, Katsuhiro

PATENT ASSIGNEE(S): Fuji Xerox Co., Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 32 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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JP 2003257669	A2	20030912	JP 2002-60558	2002 0306
US 2004018384	A1	20040129	US 2003-377672	2003 0304
PRIORITY APPLN. INFO.:			JP 2002-60558	A 2002 0306

AB The invention refers to an electroluminescent device comprising the structure -Tm-C6H4-N(Ar)-X[N(Ar)-C6H4]k-Tm- or -Tm-C6H4-C6H4-N(Ar)X[N(Ar)-C6H4-C6H4]k-Tm- [Ar = (un) substituted

benzene, univalent multinuclear aromatic hydrocarbon, univalent condensed aromatic hydrocarbon, or univalent heterocycle; X = (un)substituted divalent multinuclear aromatic hydrocarbon, divalent condensed aromatic hydrocarbon, divalent multinuclear heterocycle, divalent multinuclear aromatic hydrocarbon containing a heterocycle, or unsubstituted divalent condensed aromatic hydrocarbon containing a heterocycle; T = C1-6 divalent straight chain or C2-10 branched hydrocarbon; m = 1 - 3; k = 0, 1] of an electron transport polyether in at least one of the organic layers.

IT 597551-00-3  
     (organic electroluminescent device comprising  
     electron transporting polyether)  
 RN 597551-00-3 HCPLUS  
 CN Poly[([1,1'-biphenyl]-4-ylimino)-1,4-naphthalenediyl([1,1'-biphenyl]-4-ylimino)-1,4-phenylene-1,2-ethanediyl-1,4-phenylene]  
     (9CI) (CA INDEX NAME)

\* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT  
 \*

\* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT  
 \*  
 IC ICM H05B033-14  
     ICS C09K011-06; H05B033-22  
 CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)  
 IT 597550-98-6 597550-99-7 597551-00-3 597551-01-4  
     597551-02-5 597551-03-6  
     (organic electroluminescent device comprising  
     electron transporting polyether)

L25 ANSWER 23 OF 51 HCPLUS COPYRIGHT 2005 ACS on STN  
 ACCESSION NUMBER: 2003:559879 HCPLUS  
 DOCUMENT NUMBER: 139:124780  
 TITLE: Copolymers having aromatic amine repeating units, their compositions, and light-emitting diodes and devices  
 INVENTOR(S): Suzuki, Tomoyuki; Doi, Shuji; Noguchi, Kiminobu  
 PATENT ASSIGNEE(S): Sumitomo Chemical Co., Ltd., Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 16 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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JP 2003206335	A2	20030722	JP 2002-7167	2002 0116
PRIORITY APPLN. INFO.:			JP 2002-7167	2002

0116

AB The copolymers have (A)  $\geq 1$  stilbenyl units  $Ar_1CR_1:CR_2Ar_2$  ( $Ar_1, Ar_2$  = arylene, divalent heterocyclic group;  $R_1, R_2$  = H, alkyl, alkoxy, alkylthio, alkylsilyl, alkylamino, aryl, aryloxy, arylsilyl, arylamino, arylalkyl, arylalkoxy, arylalkylsilyl, arylalkylamino, arylalkenyl, arylalkynyl, monovalent heterocyclic group, cyano) and (B)  $\geq 1$  aromatic amine units  $Ar_3Ar_4NAr_5(NAr_6Ar_7)_n$  ( $Ar_3, Ar_5, Ar_7$  = arylene, divalent heterocyclic group;  $Ar_4, Ar_6$  = aryl, monovalent heterocyclic group;  $n = 0-3$ ). The compns. comprise the copolymers and polymers, giving fluorescence at solid states, with polystyrene-based number-average mol. weight 103-108. Light-emitting diodes, surface light sources, displays, and liquid-crystal displays using the copolymers are also claimed. The copolymers show high fluorescent intensity.

IT 565227-14-7P

(copolymers having aromatic amine units with high fluorescent intensity for LED)

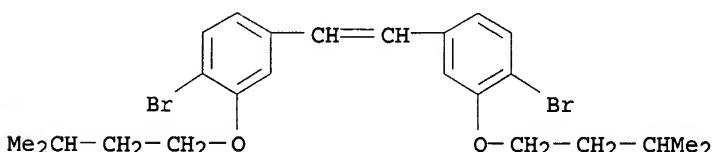
RN 565227-14-7 HCPLUS

CN 1,4-Benzenediamine, N,N'-bis(4-bromophenyl)-N,N'-bis(4-butylphenyl)-, polymer with N,N-bis(4-bromophenyl)-4-[2-[4-(1,1-dimethylethyl)phenyl]ethenyl]benzenamine and 1,1'-(1,2-ethenediyl)bis[4-bromo-3-(3-methylbutoxy)benzene] (9CI) (CA INDEX NAME)

CM 1

CRN 565227-11-4

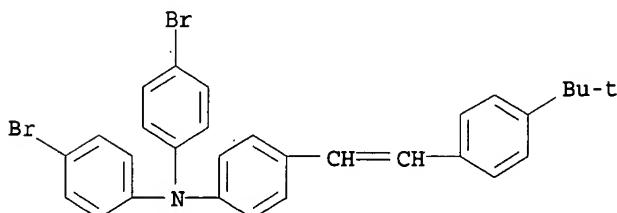
CMF C24 H30 Br2 O2



CM 2

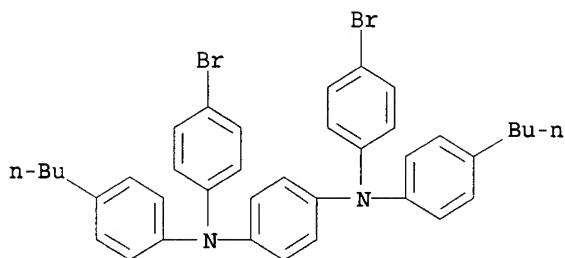
CRN 474787-40-1

CMF C30 H27 Br2 N



CM 3

CRN 372200-89-0  
 CMF C38 H38 Br2 N2



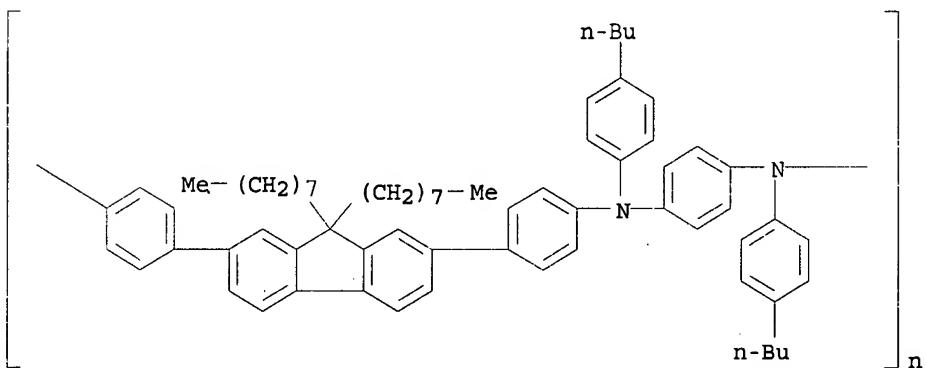
IC ICM C08G061-00  
 ICS C08L065-00; C08L101-12; C09K011-06; G02F001-1335; H05B033-14;  
 H05B033-22  
 CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)  
 Section cross-reference(s): 38, 74  
 IT 565227-12-5P 565227-13-6P 565227-14-7P  
 (copolymers having aromatic amine units with high fluorescent intensity for LED)

L25 ANSWER 24 OF 51 HCPLUS COPYRIGHT 2005 ACS on STN  
 ACCESSION NUMBER: 2003:490609 HCPLUS  
 DOCUMENT NUMBER: 139:204250  
 TITLE: Conjugated polymer blends: Linking film morphology to performance of light emitting diodes and photodiodes  
 AUTHOR(S): Moons, Ellen  
 CORPORATE SOURCE: Department of Physics, Division for Engineering Sciences, Physics and Mathematics, Karlstad University, Karlstad, 65188, Swed.  
 SOURCE: Journal of Physics: Condensed Matter (2002), 14(47), 12235-12260  
 PUBLISHER: Institute of Physics Publishing  
 DOCUMENT TYPE: Journal; General Review  
 LANGUAGE: English

AB A review. Blending is a technique known in polymer technol. that takes advantage of the processibility of polymers to produce new solid materials or composites with specific structural and phys. properties, distinct from the ones of their components. In thin films of polymer blends interesting morphologies are formed because of phase separation. For conjugated polymers, i.e. solution-processible semiconductors, blending also opens a way to optimize the performance of opto-electronic devices, bringing about technol. benefits. It is therefore crucial to achieve understanding of the effect film morphol. has on the device performance, and, ultimately, to achieve control over the phase separation in a blend, so that structures can be designed that yield the desired device performance. Light-emitting diodes (LEDs) made of polymer blends showed strongly enhanced electroluminescence (EL) efficiencies, as compared to pure homopolymers. Color conversion, white light emission, polarized light emission, emission line narrowing, and voltage-tunable colors are other effects that were observed in blends containing light-emitting polymers.

Although the enhanced EL efficiency is attributed to Foerster-type energy transfer in numerous reports, the exciton dynamics behind this effect is not well understood. Here the authors review the formation and morphol. of thin films of conjugated polymer blends, as well as modern microscopic and spectroscopic techniques to study them. Also, the authors attempt to link the film morphol. to the electronic performance of electroluminescent and photovoltaic devices and discuss energy and charge transfer phenomena at the interfaces. The authors also report some new results, specifically for polyfluorene blends in LEDs.

- IT 223569-28-6, PFB  
 (PFB; relationship between polymer blend film morphol. and performance of light emitting diodes and photodiodes)
- RN 223569-28-6 HCPLUS
- CN Poly[[(4-butylphenyl)imino]-1,4-phenylene[(4-butylphenyl)imino]-1,4-phenylene(9,9-dioctyl-9H-fluorene-2,7-diyl)-1,4-phenylene] (9CI) (CA INDEX NAME)



CC 73-0 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)  
 Section cross-reference(s): 38, 66, 76

- IT 223569-28-6, PFB  
 (PFB; relationship between polymer blend film morphol. and performance of light emitting diodes and photodiodes)

REFERENCE COUNT: 186 THERE ARE 186 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

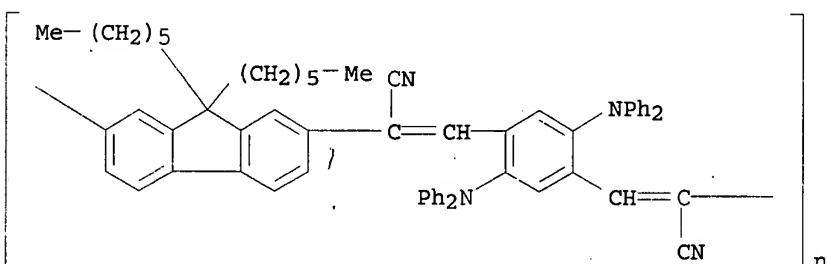
L25 ANSWER 25 OF 51 HCPLUS COPYRIGHT 2005 ACS on STN  
 ACCESSION NUMBER: 2003:381297 HCPLUS  
 DOCUMENT NUMBER: 138:345750  
 TITLE: Conjugated polymers containing arylamine for light-emitting diodes  
 AUTHOR(S): Shi, Jianmin; Zheng, Shiying  
 CORPORATE SOURCE: Eastman Kodak Co., Rochester, NY, 14650, USA  
 SOURCE: Polymeric Materials Science and Engineering (2001), 84, 473-474  
 CODEN: PMSEDG; ISSN: 0743-0515  
 PUBLISHER: American Chemical Society  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English

**AB** The authors report the synthesis and characterization of 5 polymers (P1-P5) with arylamine pendants. Various aromatic groups, were incorporated into polymers to fine tune the optoelectronic properties and long side chains were introduced to increase solubility 9,10-Diphenylanthracene is a highly fluorescent and efficient chromophore and was incorporated into P2. Strong electron withdrawing groups such as CN increase the electron affinity of PPV polymers and facilitate electron injection, so P3 was designed based on this approach. The synthesis of the polymers, their absorption and photoluminescence in solution were reported. Single-layer ITO/polymer/Mg:Ag devices were fabricated from spin-coated polymer thin films and characterized.

**IT** 369370-71-8P 369370-72-9P 380498-80-6P  
 (synthesis, absorption and photoluminescence properties of conjugated polymers containing arylamine for light-emitting diodes)

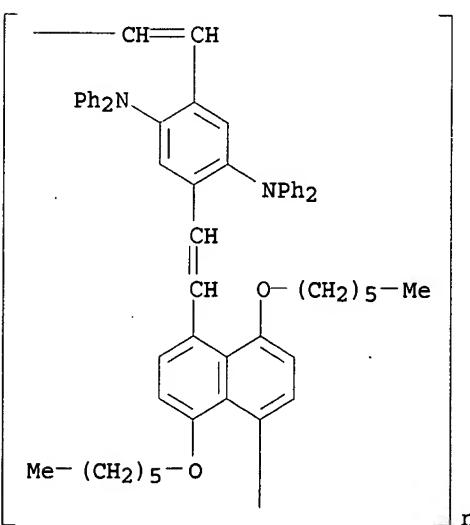
**RN** 369370-71-8 HCPLUS

**CN** Poly[(9,9-dihexyl-9H-fluorene-2,7-diyl) (1-cyano-1,2-ethenediyl) [2,5-bis(diphenylamino)-1,4-phenylene] (2-cyano-1,2-ethenediyl)] (9CI) (CA INDEX NAME)



**RN** 369370-72-9 HCPLUS

**CN** Poly[[4,8-bis(hexyloxy)-1,5-naphthalenediyl]-1,2-ethenediyl[2,5-bis(diphenylamino)-1,4-phenylene]-1,2-ethenediyl] (9CI) (CA INDEX NAME)



RN 380498-80-6 HCAPLUS  
 CN Poly[[2,6-bis(octyloxy)-9,10-anthracenediyl]-1,4-phenylene-1,2-ethenediyl[2,5-bis(diphenylamino)-1,4-phenylene]-1,2-ethenediyl-1,4-phenylene] (9CI) (CA INDEX NAME)

\* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT  
 \*

\* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT  
 \*

CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

Section cross-reference(s): 36, 37, 76

IT 369370-71-8P 369370-72-9P 369385-54-6P

369385-63-7P 380498-80-6P  
 (synthesis, absorption and photoluminescence properties of conjugated polymers containing arylamine for light-emitting diodes)

REFERENCE COUNT: 13 THERE ARE 13 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L25 ANSWER 26 OF 51 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2002:880789 HCAPLUS

DOCUMENT NUMBER: 138:244989

TITLE: Polymer-based red, green, and blue emitting devices fabricated by reductive photopatterning

AUTHOR(S): Trattnig, Gernot; Pogantsch, Alexander; Langer, Gregor; Kern, Wolfgang; Zojer, Egbert

CORPORATE SOURCE: Institut f. Festkorperphysik, Technische Universitat Graz, Graz, A-8010, Austria

SOURCE: Applied Physics Letters (2002), 81(22), 4269-4271

PUBLISHER: CODEN: APPLAB; ISSN: 0003-6951  
 American Institute of Physics

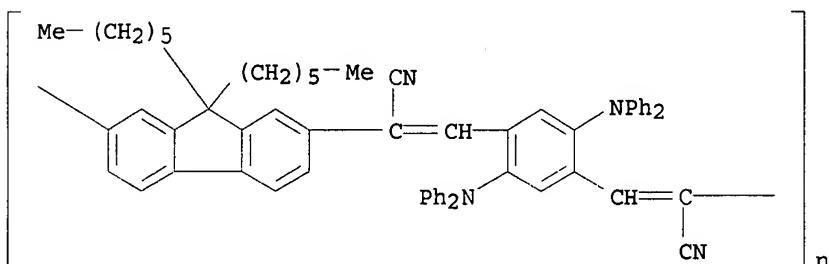
DOCUMENT TYPE: Journal

LANGUAGE: English

AB Using a color tuning approach reliant on reductive photopatterning, we present red-green-blue electroluminescence from a single layer polymer light-emitting device. To be able to cover the full color range, we employ a single emissive layer consisting of a blue emitter (the host polymer), as well as green and red emitting guest polymers. The energy transfer between the host and the various guest compds. is tuned via a reductive photoinitiated process in the presence of gaseous hydrazine. This process is compatible with regular film casting techniques such as spin coating, and therefore can be regarded as a promising alternative to the more complex, traditional patterning approaches.

IT 369370-71-8  
 (red-emitter; polymer-based red, green, and blue emitting devices fabricated by reductive photopatterning using UV irradiation in hydrazine atmospheric)

RN 369370-71-8 HCAPLUS  
 CN Poly[(9,9-dihexyl-9H-fluorene-2,7-diyl)(1-cyano-1,2-ethenediyl)[2,5-bis(diphenylamino)-1,4-phenylene](2-cyano-1,2-ethenediyl)] (9CI) (CA INDEX NAME)



CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)  
 Section cross-reference(s): 36, 38, 76

IT 369370-71-8  
 (red-emitter; polymer-based red, green, and blue emitting devices fabricated by reductive photopatterning using UV irradiation in hydrazine atmospheric)

REFERENCE COUNT: 16 THERE ARE 16 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L25 ANSWER 27 OF 51 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2002:814503 HCAPLUS

DOCUMENT NUMBER: 137:317691

TITLE: Optoelectronic devices and a method for producing the same

INVENTOR(S): MacKenzie, J. Devin; Arias, Ana Claudia; Friend, Richard Henry; Huck, Wilhelm

PATENT ASSIGNEE(S): Cambridge University Technical Services Limited, UK

SOURCE: PCT Int. Appl., 32 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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WO 2002084758	A1	20021024	WO 2002-GB1723	2002 0412

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM  
 RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC,

NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW,  
ML, MR, NE, SN, TD, TG  
EP 1378016 A1 20040107 EP 2002-720214  
2002  
0412

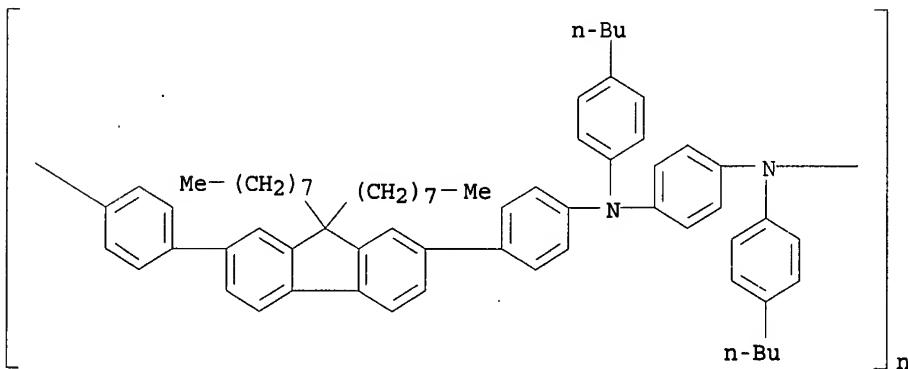
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE,  
MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR  
JP 2004523876 T2 20040805 JP 2002-581600  
2002  
0412

US 2004214039 A1 20041028 US 2004-474814  
2004  
0615

PRIORITY APPLN. INFO.: GB 2001-9295 A  
2001  
0412

WO 2002-GB1723 W  
2002  
0412

- AB Optoelectronic devices (e.g., light-emitting devices, photodetectors) are described which employ polymer blends in which phase separation of the polymers in the polymer blend is induced so as to control the propagation of light in a predetd. direction. In light-emitting devices, the light-emitting material may be incorporated within the blend or may be a sep. layer. Methods for fabricating the devices including methods for producing phase-separated blends, are also described.
- IT 223569-28-6 (optoelectronic devices using phase-separated polymer blends for light control and their fabrication)
- RN 223569-28-6 HCPLUS
- CN Poly[[(4-butylphenyl)imino]-1,4-phenylene[(4-butylphenyl)imino]-1,4-phenylene(9,9-dioctyl-9H-fluorene-2,7-diyl)-1,4-phenylene] (9CI) (CA INDEX NAME)



- IC ICM H01L051-20  
ICS H01L027-00
- CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)  
Section cross-reference(s): 38, 76
- IT 210347-52-7, F8BT 223569-28-6

(optoelectronic devices using phase-separated polymer blends for light control and their fabrication)

REFERENCE COUNT: 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L25 ANSWER 28 OF 51 HCPLUS COPYRIGHT 2005 ACS on STN  
 ACCESSION NUMBER: 2002:791425 HCPLUS  
 DOCUMENT NUMBER: 138:9359  
 TITLE: Novel Thermally Stable Blue-Light-Emitting Polymer Containing N,N,N',N'-Tetraphenyl-Phenylenediamine Units and Its Intramolecular Energy Transfer  
 AUTHOR(S): Li, Hongchao; Hu, Yufeng; Zhang, Yanguang; Ma, Dongge; Wang, Lixiang; Jing, Xiabin; Wang, Fosong  
 CORPORATE SOURCE: State Key Laboratory of Polymer Physics and Chemistry, Changchun Institute of Applied Chemistry, Chinese Academy of Sciences, Changchun, 130022, Peop. Rep. China  
 SOURCE: Chemistry of Materials (2002), 14(11), 4484-4486  
 CODEN: CMATEX; ISSN: 0897-4756  
 PUBLISHER: American Chemical Society  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English

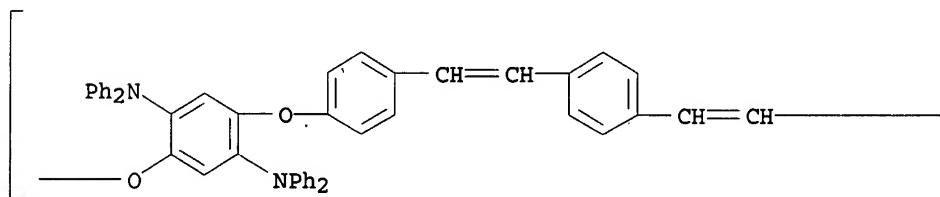
AB A novel thermally stable and soluble blue-light-emitting polymer containing bulky N,N,N',N'-tetraphenylphenylenediamine (TPPA) and phenylenevinylene (PV) moieties, P1, was synthesized by the Wittig condensation reaction in a good yield (>80 %). The resulting polymer possesses a high mol. weight ( $M_w = 68,200$ ) and excellent thermal stability ( $T_g = 179$  °C). A blue light with the maximum emission peak at 430 nm in solution and 450 nm in film was observed when excited at different wavelengths where TPPA and PV moieties display their own absorption peak, indicating the existence of intramol. energy transfer between them. The preliminary single-layer light-emitting device with a configuration of ITO/P1/Mg-Ag emitted a bright blue light with an emission peak at 442 nm. The maximum brightness and electroluminescent efficiency reach 144 cd/m<sup>2</sup> and 0.2 cd/A, resp.

IT 477245-47-9P  
 (film and in solution; novel thermally stable blue-light-emitting polymer containing N,N,N',N'-tetra-Ph-phenylenediamine units and its intramol. energy transfer)

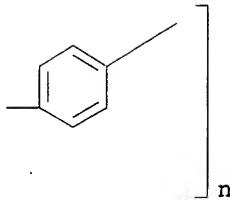
RN 477245-47-9 HCPLUS

CN Poly[oxy[2,5-bis(diphenylamino)-1,4-phenylene]oxy-1,4-phenylene-1,2-ethenediyl-1,4-phenylene-1,2-ethenediyl-1,4-phenylene] (9CI)  
 (CA INDEX NAME)

PAGE 1-A



PAGE 1-B



CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)  
 Section cross-reference(s): 36, 76  
 IT 477245-47-9P  
 (film and in solution; novel thermally stable blue-light emitting polymer containing N,N,N',N'-tetra-Ph-phenylenediamine units and its intramol. energy transfer)  
 REFERENCE COUNT: 31 THERE ARE 31 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L25 ANSWER 29 OF 51 HCAPLUS COPYRIGHT 2005 ACS on STN  
 ACCESSION NUMBER: 2002:616131 HCAPLUS  
 DOCUMENT NUMBER: 137:161256  
 TITLE: Organic electro-luminescent devices, manufacturing method capable of forming a homogeneous luminescent layer with no phase separation, and electronic equipment  
 INVENTOR(S): Morii, Katsuyuki; Seki, Shunichi  
 PATENT ASSIGNEE(S): Seiko Epson Corporation, Japan  
 SOURCE: U.S. Pat. Appl. Publ., 17 pp.  
 CODEN: USXXCO  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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US 2002109456	A1	20020815	US 2001-994816	2001 1128
JP 2002231447	A2	20020816	JP 2001-353682	2001 1119
CN 1359253	A	20020717	CN 2001-139498	2001 1127
JP 2004140004	A2	20040513	JP 2004-38297	2004 0216
PRIORITY APPLN. INFO.:			JP 2000-361559	A 2000 1128
			JP 2001-353682	A

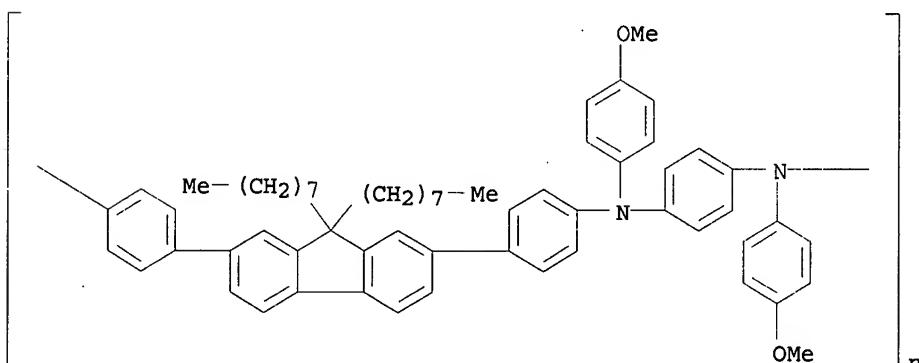
2001  
1119

AB Methods for manufacturing organic electroluminescent devices are discussed which entail forming light-emitting layers by discharging above a substrate  $\geq 2$  compns. each including  $\geq 1$  organic electroluminescent material, the order of discharging the compns. above the substrate starting with the composition which has the fewest number of organic electroluminescent materials or the composition which is most difficult to be phase separated after the layer is formed. Organic electroluminescent devices (OLEDs) manufactured by the above method are also described as are electronic devices employing the OLEDs.

IT 223569-30-0  
 (light-emitting layer containing; method for manufacturing organic electro-luminescent devices capable of forming a homogeneous luminescent layer with no phase separation, and electronic devices)

RN 223569-30-0 HCPLUS

CN Poly[[(4-methoxyphenyl)imino]-1,4-phenylene[(4-methoxyphenyl)imino]-1,4-phenylene(9,9-diethyl-9H-fluorene-2,7-diyl)-1,4-phenylene] (9CI) (CA INDEX NAME)

IC ICM B05D005-12  
ICS H05B033-10

INCL 313504000

CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

Section cross-reference(s): 74, 76  
IT 195456-48-5, Poly(9,9-diethyl-9H-fluorene-2,7-diyl) 210347-52-7  
220797-16-0 223569-30-0

(light-emitting layer containing; method for manufacturing organic electro-luminescent devices capable of forming a homogeneous luminescent layer with no phase separation, and electronic devices)

L25 ANSWER 30 OF 51 HCPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2002:591721 HCPLUS

DOCUMENT NUMBER: 137:147552

TITLE: Polymeric fluorescent substances for polymer light emitting devices and production method thereof

INVENTOR(S): Noguchi, Takanobu; Tsubata, Yoshiaki; Doi, Shuji

PATENT ASSIGNEE(S) : Sumitomo Chemical Company, Limited, Japan  
 SOURCE: Eur. Pat. Appl., 32 pp.  
 CODEN: EPXXDW  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 1229063	A2	20020807	EP 2002-250742	2002 0204
EP 1229063	A3	20020814	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR	
WO 2002102925	A1	20021227	WO 2001-JP5219	2001 0619
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, KE, KG, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
US 2002177687	A1	20021128	US 2002-62223	2002 0204
US 6905785	B2	20050614		
JP 2002338665	A2	20021127	JP 2002-27908	2002 0205
US 2004234810	A1	20041125	US 2004-480996	2004 0520
PRIORITY APPLN. INFO.:			JP 2001-28001	A 2001 0205
			JP 2001-71776	A 2001 0314
			WO 2001-JP5219	W 2001 0619

AB Provided is a method of producing a polymeric fluorescent substance wherein one or more monomers X<sub>1</sub>Ar<sub>1</sub>X<sub>2</sub> (wherein Ar<sub>1</sub> represents a divalent group selected from arylene groups, divalent heterocyclic compound groups, and divalent or trivalent hetero atom-bonded arylene or divalent heterocyclic compound groups, and X<sub>1</sub> and X<sub>2</sub> represent leaving groups) are polymerized in the presence of a zerovalent nickel complex. By using the polymeric fluorescent

substance, a high performance polymer LED can easily be obtained. Thus, 0.82 g 2,7-dibromo-9,9-diptylfluorene was polymerized in the presence of 0.55 g 2,2'-bipyridyl ligand and 0.96 g bis(1,5-cyclooctadiene) nickel(0) polymerization catalyst in THF to give a polymer with weight average mol. weight 5.4 + 105, number average mol. weight 1.7 + 105, fluorescent peak at 428 nm, and relative fluorescent intensity 4.0, which was used to prepare a light emitting device.

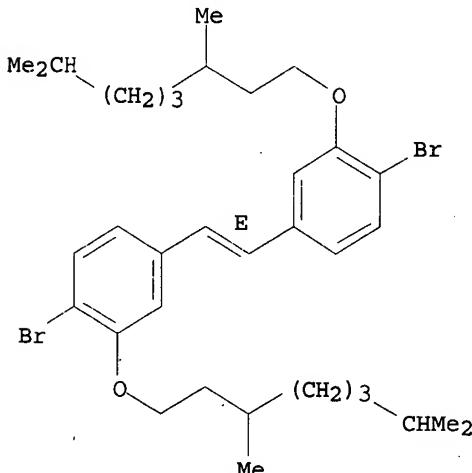
IT 444796-31-0P 444796-33-2P  
 (preparation of fluorescent polymers for polymer light emitting devices)  
 RN 444796-31-0 HCPLUS  
 CN 1,4-Benzenediamine, N,N'-bis(4-bromophenyl)-N,N'-bis(4-butylphenyl)-, polymer with 1,1'-(1E)-1,2-ethenediylbis[4-bromo-3-[(3,7-dimethyloctyl)oxy]benzene] (9CI) (CA INDEX NAME)

CM 1

CRN 444795-98-6

CMF C34 H50 Br2 O2

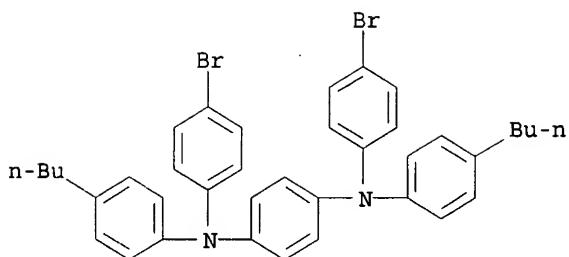
Double bond geometry as shown.



CM 2

CRN 372200-89-0

CMF C38 H38 Br2 N2



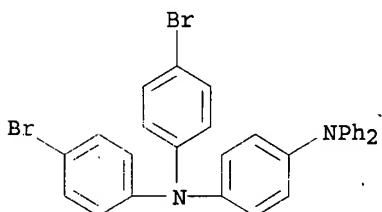
RN 444796-33-2 HCAPLUS

CN 1,4-Benzenediamine, N,N-bis(4-bromophenyl)-N',N'-diphenyl-,  
polymer with stereoisomer of 1,1'-(1E)-1,2-ethenediylbis[4-bromo-3-  
[(3,7-dimethyloctyl)oxy]benzene] (9CI) (CA INDEX NAME)

CM 1

CRN 444796-17-2

CMF C30 H22 Br2 N2

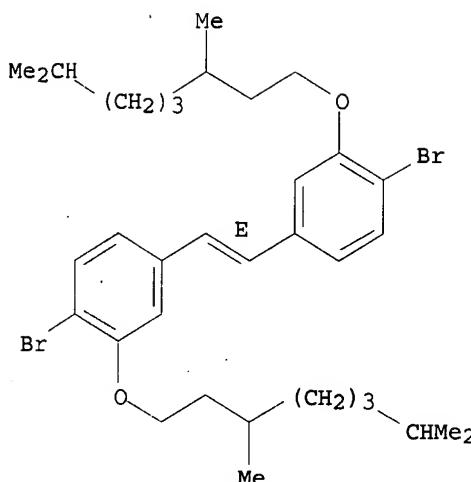


CM 2

CRN 444795-98-6

CMF C34 H50 Br2 O2

Double bond geometry as shown.



IC ICM C08G061-02

ICS C08G061-10; C09K011-06

CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

Section cross-reference(s): 35, 38, 76

IT 444795-96-4P 444795-99-7P 444796-01-4P 444796-03-6P  
444796-05-8P 444796-07-0P 444796-10-5P 444796-13-8P  
444796-14-9P 444796-18-3P 444796-21-8P 444796-24-1P  
444796-27-4P 444796-29-6P 444796-30-9P 444796-31-0P  
**444796-33-2P** 444796-35-4P 444890-57-7P

(preparation of fluorescent polymers for polymer light emitting devices)

L25 ANSWER 31 OF 51 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2002:466837 HCAPLUS

DOCUMENT NUMBER: 137:192418

TITLE: Blue emission from light-emitting diodes based on lithium complex

AUTHOR(S): Chen, Zhijian; Yu, Junsheng; Miyata, Kenji Ogino Seizo

CORPORATE SOURCE: Graduate School of Bio-Applications and System Engineering, Tokyo University of Agriculture and Technology, Tokyo, 184-8588, Japan

SOURCE: Journal of Physics D: Applied Physics (2002), 35(11), 1099-1102

CODEN: JPAPBE; ISSN: 0022-3727

PUBLISHER: Institute of Physics Publishing

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The authors report the optical and electroluminescent properties of the Li complex of (2,3-dimethyl-8-hydroxyquinoline) Li (LiMMq), exhibiting intense photoluminescence (PL), peaked at .apprx.458 nm. As the result of electron-donating Me groups in 8-hydroxyquinoline, the PL spectrum is blue-shifted relative to (8-hydroxyquinoline) Li (Liq). The double-layer electroluminescent devices with a novel polymer poly(N,N'-diphenyl-N,N'-bis(4-methylphenyl)-1,4-phenylenediamine-1,3-diisopropenylbenzene) as hole transporting layer and the LiMMq as emitting layer, sandwiched between cathode of Mg:Ag alloy and

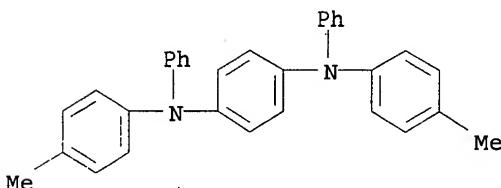
anode of In-Sn oxide, were fabricated, and the bright blue electroluminescence with luminance of >8000 cd m<sup>-2</sup> was obtained. The properties indicate that the LiMMq is a potential blue emitting material for the application in light-emitting diodes.

IT 306734-14-5P  
 (blue emission from light-emitting diodes  
 based on lithium complex)

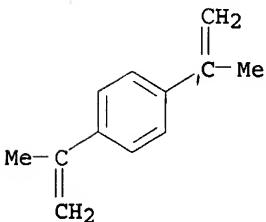
RN 306734-14-5 HCAPLUS

CN 1,4-Benzenediamine, N,N'-bis(4-methylphenyl)-N,N'-diphenyl-,  
 polymer with 1,4-bis(1-methylethenyl)benzene (9CI) (CA INDEX  
 NAME)

CM 1

CRN 138171-14-9  
 CMF C32 H28 N2

CM 2

CRN 1605-18-1  
 CMF C12 H14

CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

Section cross-reference(s) : 76

IT 306734-14-5P

(blue emission from light-emitting diodes  
 based on lithium complex)

REFERENCE COUNT: 31 THERE ARE 31 CITED REFERENCES AVAILABLE  
 FOR THIS RECORD. ALL CITATIONS AVAILABLE  
 IN THE RE FORMAT

L25 ANSWER 32 OF 51 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2002:238121 HCAPLUS

DOCUMENT NUMBER: 136:286261

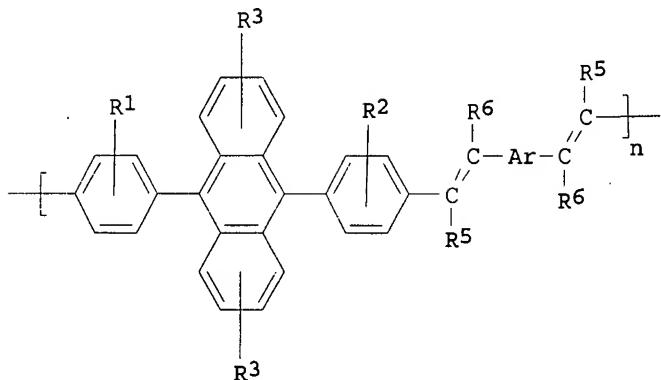
TITLE: Electroluminescence devices

INVENTOR(S): Chen, Shi Min; Shi, Chan Min

PATENT ASSIGNEE(S) : Eastman Kodak Co., USA  
 SOURCE: Jpn. Kokai Tokkyo Koho, 88 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2002093582	A2	20020329	JP 2001-178712	2001 0613
PRIORITY APPLN. INFO.:			US 2000-593073	A 2000 0613

GI



I

- AB The devices comprise a phosphor comprising a diphenylanthracene conjugated polymer I (R1-6 = H, C1-24 alkyl, C1-24 alkoxy; C6-28 (substituted) aryl; C4-40 (substituted) heteroaryl; R5,6 = cyano).  
 IT 406216-18-0 (organic electroluminescence devices containing diphenylanthracene conjugated polymer)  
 RN 406216-18-0 HCPLUS  
 CN Poly[ [2,6-bis[(2-ethylhexyl)oxy]-9,10-anthracenediyl]-1,4-phenylene-1,2-ethenediyl[2,5-bis(diphenylamino)-1,4-phenylene]-1,2-ethenediyl-1,4-phenylene] (9CI) (CA INDEX NAME)

\* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT  
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\* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT

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IC ICM H05B033-14  
 ICS C08G016-02; C09K011-06  
 CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)  
 IT 37271-44-6 50926-11-9, ITO 406216-11-3 406216-12-4  
 406216-13-5 406216-14-6 406216-15-7 406216-16-8  
 406216-17-9 406216-18-0 406216-19-1 406216-20-4  
 406216-21-5 406499-00-1 406499-02-3  
 (organic electroluminescence devices containing  
 diphenylanthracene conjugated polymer)

L25 ANSWER 33 OF 51 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2001:895587 HCAPLUS

DOCUMENT NUMBER: 136:45407

TITLE: Electroluminescent devices having arylamine polymers

INVENTOR(S): Shi, Jianmin; Zheng, Shiying

PATENT ASSIGNEE(S): Eastman Kodak Company, USA

SOURCE: U.S., 32 pp.

CODEN: USXXAM

DOCUMENT TYPE: Patent

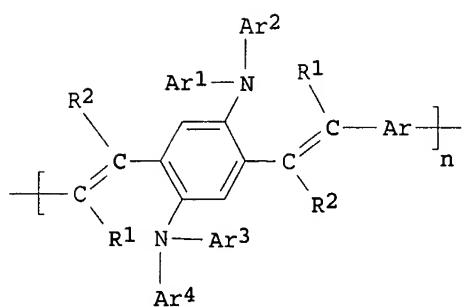
LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

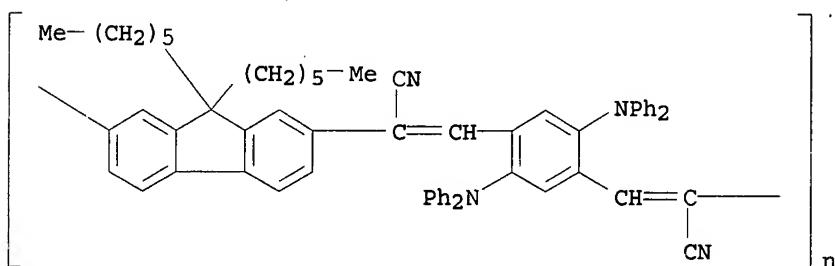
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
-----	----	-----	-----	-----
US 6329086	B1	20011211	US 2000-593127	2000 0613
TW 530076	B	20030501	TW 2001-90110070	2001 0427
EP 1164178	A1	20011219	EP 2001-202101	2001 0601
EP 1164178	B1	20030903		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
JP 2002083683	A2	20020322	JP 2001-176991	2001 0612
PRIORITY APPLN. INFO.:			US 2000-593127	A 2000 0613

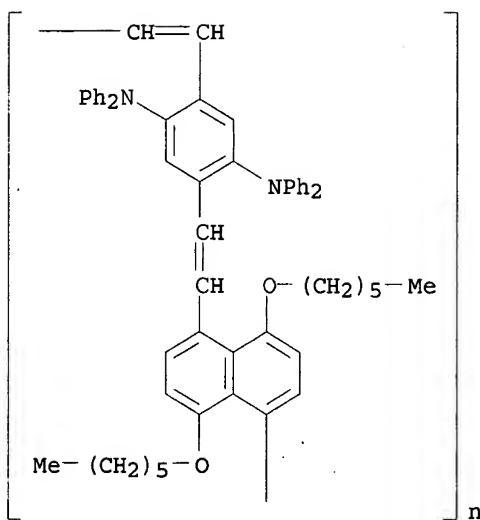
GI



- AB Electroluminescent devices which include an anode, a cathode, and a polymer luminescent material disposed between the anode and cathode are described in which the polymer luminescent material includes arylamine moiety are described by the general formula I (R1 and R2 = independently selected H, C1-24 alkyl, C6-40 (un)substituted aryl, C4-40 (un)substituted heteroaryl, or cyano groups; and Ar, Ar1-4 = independently selected C6-40 (un)substituted aryl; and/or C4-40 (un)substituted heteroaryl groups). The polymer luminescent material may be doped with ≥1 fluorescent dyes or other light-emitting materials.
- IT 369370-71-8P 369370-72-9P 380498-76-0P  
380498-77-1P 380498-78-2P 380498-79-3P  
380498-80-6P 380498-81-7P  
(electroluminescent devices using arylamine polymers)
- RN 369370-71-8 HCPLUS
- CN Poly[(9,9-dihexyl-9H-fluorene-2,7-diyl)(1-cyano-1,2-ethenediyl)[2,5-bis(diphenylamino)-1,4-phenylene](2-cyano-1,2-ethenediyl)] (9CI) (CA INDEX NAME)

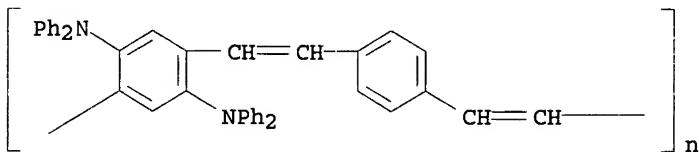


- RN 369370-72-9 HCPLUS
- CN Poly[[4,8-bis(hexyloxy)-1,5-naphthalenediyl]-1,2-ethenediyl[2,5-bis(diphenylamino)-1,4-phenylene]-1,2-ethenediyl] (9CI) (CA INDEX NAME)



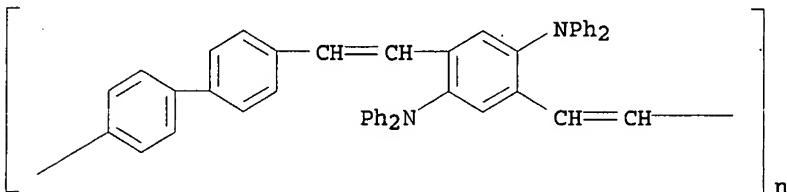
RN 380498-76-0 HCPLUS

CN Poly[[2,5-bis(diphenylamino)-1,4-phenylene]-1,2-ethenediyl-1,4-phenylene-1,2-ethenediyl] (9CI) (CA INDEX NAME)



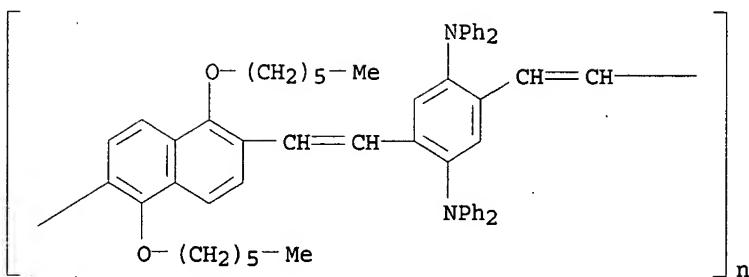
RN 380498-77-1 HCPLUS

CN Poly[[1,1'-biphenyl]-4,4'-diyl-1,2-ethenediyl[2,5-bis(diphenylamino)-1,4-phenylene]-1,2-ethenediyl] (9CI) (CA INDEX NAME)



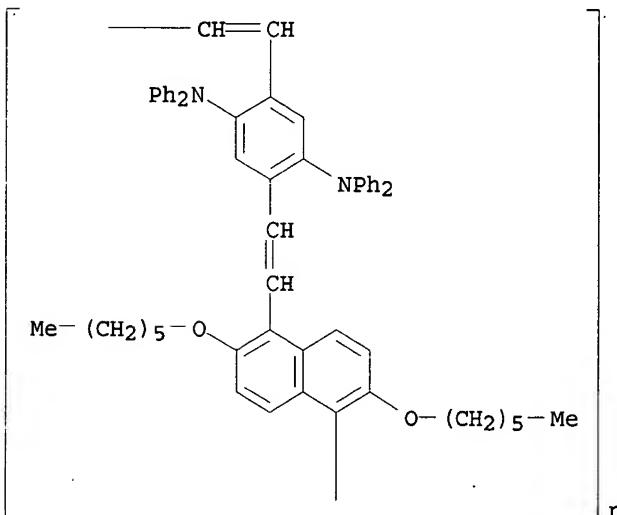
RN 380498-78-2 HCPLUS

CN Poly[[1,5-bis(hexyloxy)-2,6-naphthalenediyl]-1,2-ethenediyl[2,5-bis(diphenylamino)-1,4-phenylene]-1,2-ethenediyl] (9CI) (CA INDEX NAME)



RN 380498-79-3 HCPLUS

CN Poly[2,6-bis(hexyloxy)-1,5-naphthalenediyl]-1,2-ethenediyl[2,5-bis(diphenylamino)-1,4-phenylene]-1,2-ethenediyl] (9CI) (CA INDEX NAME)



RN 380498-80-6 HCPLUS

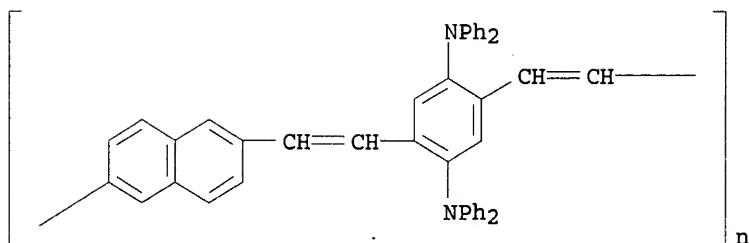
CN Poly[2,6-bis(octyloxy)-9,10-anthracenediyl]-1,4-phenylene-1,2-ethenediyl[2,5-bis(diphenylamino)-1,4-phenylene]-1,2-ethenediyl-1,4-phenylene] (9CI) (CA INDEX NAME)

\* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT  
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\* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT  
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RN 380498-81-7 HCPLUS

CN Poly[2,6-naphthalenediyl-1,2-ethenediyl][2,5-bis(diphenylamino)-1,4-phenylene]-1,2-ethenediyl] (9CI) (CA INDEX NAME)



IC ICM H05B033-14

INCL 428690000

CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

Section cross-reference(s): 38, 76

IT 369370-71-8P 369370-72-9P 369385-63-7P  
380498-76-0P 380498-77-1P 380498-78-2P  
380498-79-3P 380498-80-6P 380498-81-7P  
380643-48-1P

(electroluminescent devices using arylamine polymers)

REFERENCE COUNT: 12 THERE ARE 12 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L25 ANSWER 34 OF 51 HCPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2001:689529 HCPLUS

DOCUMENT NUMBER: 135:378433

TITLE: Blue and yellow emission from derivatives of tris(8-hydroxyquinoline)aluminum light-emitting diodes

AUTHOR(S): Chen, Zhijian; Yu, Junsheng; Sone, Masato; Miyata, Seizo; Lu, Youmei; Watanabe, Toshiyuki

CORPORATE SOURCE: Graduate School of Bio-Applications and System Engineering, Tokyo University of Agriculture and Technology, Tokyo, 184-8588, Japan

SOURCE: Journal of Physics D: Applied Physics (2001), 34(17), 2679-2682

CODEN: JPAPBE; ISSN: 0022-3727

PUBLISHER: Institute of Physics Publishing

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The novel derivs. of tris(8-hydroxyquinoline)aluminum (Alq3), tris[5-(methyl-malononitrile)-8-hydroxyquinoline]aluminum and tris(2,3-dimethyl-8-hydroxyquinoline)aluminum were synthesized. The double-layer electroluminescent devices were fabricated with a novel polymer poly(N,N'-diphenyl-N,N'-bis(4-methylphenyl)-1,4-phenylenediamine-1,3-diisopropenylbenzene) as a hole transporting layer and the derivs. as an emitting layer, sandwiched between an anode of Mg:Ag and a cathode of In-Sn oxide. Bright blue and yellow electroluminescence emissions were obtained from the devices. The exptl. results indicate that a functional group of electron acceptors connected to 8-hydroxyquinoline results in the emission red shift and a functional group of electron donors results in the emission blueshift. Alq3 and its derivs. are expected to be used as an emitter to achieve various color emissions.

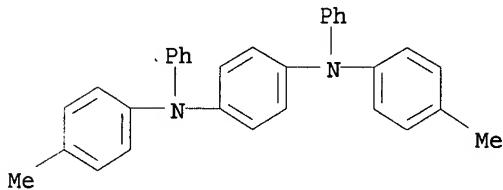
IT 306734-14-5

(blue and yellow emission from derivs. of tris(8-hydroxyquinoline)aluminum light-emitting

diodes)  
 RN 306734-14-5 HCAPLUS  
 CN 1,4-Benzenediamine, N,N'-bis(4-methylphenyl)-N,N'-diphenyl-,  
 polymer with 1,4-bis(1-methylethenyl)benzene (9CI) (CA INDEX  
 NAME)

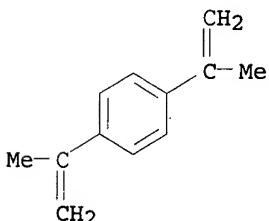
CM 1

CRN 138171-14-9  
 CMF C32 H28 N2



CM 2

CRN 1605-18-1  
 CMF C12 H14



CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

IT 306734-14-5 374690-46-7 374690-47-8,  
 Tris(2,3-dimethyl-8-hydroxyquinolinato)aluminum  
 (blue and yellow emission from derivs. of tris(8-  
 hydroxyquinoline)aluminum light-emitting  
 diodes)

REFERENCE COUNT: 15 THERE ARE 15 CITED REFERENCES AVAILABLE  
 FOR THIS RECORD. ALL CITATIONS AVAILABLE  
 IN THE RE FORMAT

L25 ANSWER 35 OF 51 HCAPLUS COPYRIGHT 2005 ACS on STN  
 ACCESSION NUMBER: 2001:582418 HCAPLUS  
 DOCUMENT NUMBER: 135:336416  
 TITLE: Conjugated polymers containing arylamine  
 pendants for light-emitting diodes  
 Shi, Jianmin; Zheng, Shiying  
 AUTHOR(S):  
 CORPORATE SOURCE: Research & Development, Eastman Kodak Company,  
 Rochester, NY, 14650, USA  
 SOURCE: Macromolecules (2001), 34(19), 6571-6576  
 CODEN: MAMOBX; ISSN: 0024-9297

PUBLISHER:  
DOCUMENT TYPE:  
LANGUAGE:

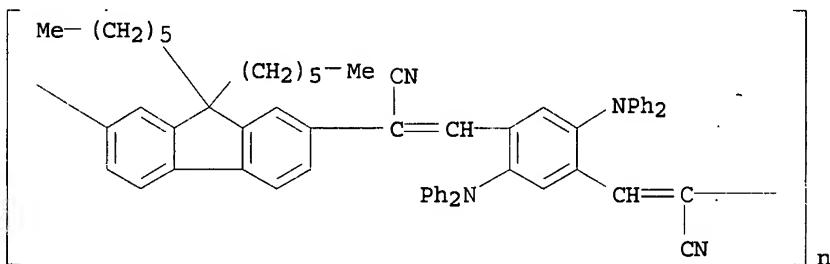
American Chemical Society  
Journal  
English

AB New conjugated light-emitting polymers containing arylamine pendants have been designed, synthesized, and characterized. The resulting polymers are thermally stable, have rigid backbones, show high T<sub>g</sub> and T<sub>d</sub> values, and are readily soluble in organic solvents. The single-layer LED devices fabricated from these polymers emit light ranging from bright yellow to bright red. The color of the emitting light can be tuned by incorporating various aromatic units. The devices show very low turn-on voltages.

IT 369370-71-8P 369370-72-9P  
(preparation and application of conjugated polymers containing arylamine pendant group for light-emitting diodes)

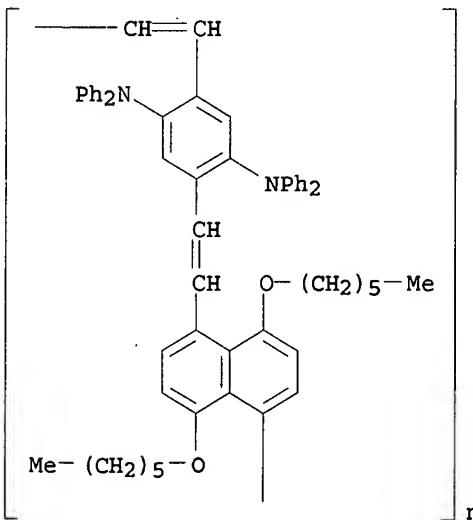
RN 369370-71-8 HCPLUS

CN Poly[(9,9-dihexyl-9H-fluorene-2,7-diyl)(1-cyano-1,2-ethenediyl)[2,5-bis(diphenylamino)-1,4-phenylene](2-cyano-1,2-ethenediyl)] (9CI) (CA INDEX NAME)



RN 369370-72-9 HCPLUS

CN Poly[[4,8-bis(hexyloxy)-1,5-naphthalenediyl]-1,2-ethenediyl[2,5-bis(diphenylamino)-1,4-phenylene]-1,2-ethenediyl] (9CI) (CA INDEX NAME)



CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related

## Properties)

Section cross-reference(s): 38, 76

IT 369370-71-8P 369370-72-9P 369370-73-0P  
 369370-74-1P 369370-75-2P 369370-76-3P 369385-54-6P  
 369385-63-7P

(preparation and application of conjugated polymers containing arylamine pendant group for light-emitting diodes)

REFERENCE COUNT: 20 THERE ARE 20 CITED REFERENCES AVAILABLE  
 FOR THIS RECORD. ALL CITATIONS AVAILABLE  
 IN THE RE FORMAT

L25 ANSWER 36 OF 51 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2001:422364 HCAPLUS

DOCUMENT NUMBER: 135:167478

TITLE: Influence of sensitizer on organic electroluminescence

AUTHOR(S): Chen, Zhijian; Yu, Junsheng; Sakuratani, Yuuki; Li, Minrun; Sone, Masato; Miyata, Seizo; Watanabe, Toshiyuki; Wang, Xiaoqing; Sato, Hisaya

CORPORATE SOURCE: Graduate School of Bio-Applications and System Engineering, Tokyo University of Agriculture and Technology, Koganei, Tokyo, 184-8588, Japan

SOURCE: Journal of Applied Physics (2001); 89(12), 7895-7898

CODEN: JAPIAU; ISSN: 0021-8979

PUBLISHER: American Institute of Physics

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The authors synthesized a polymer, poly(N,N'-diphenyl-N,N'-bis(4-methylphenyl)-1,4-phenylenediamine-1,3-diisopropenylbenzene) (PDAAIPD), of which the energy of the HOMO was measured to be 5.6 eV below vacuum level. PDAIPB was used as a hole transporter in a light emitting diode, with tri(8-hydroxyquinoline)aluminum (Alq<sub>3</sub>) as an electron transporter and emitting layer to ameliorate the stability of the device, and fullerene doped in the hole transporting layer as a sensitizer to study the influence of sensitizer on organic electroluminescence (EL). Internal EL quantum efficiency as high as 7.8% was obtained under an applied electric field of 1.2 x 10<sup>6</sup> V/cm and doping fullerene concentration 0.9%. A function for EL quantum efficiency in terms of the dopant concentration is derived. The theor. anal. is consistent with the exptl. results.

IT 306734-14-5

(influence of fullerene sensitizer on electroluminescence polymer hole transporting layer)

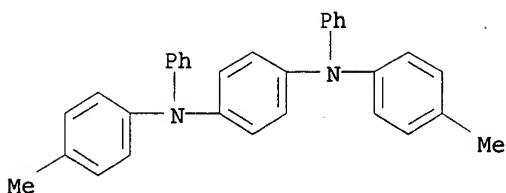
RN 306734-14-5 HCAPLUS

CN 1,4-Benzenediamine, N,N'-bis(4-methylphenyl)-N,N'-diphenyl-, polymer with 1,4-bis(1-methylethenyl)benzene (9CI) (CA INDEX NAME)

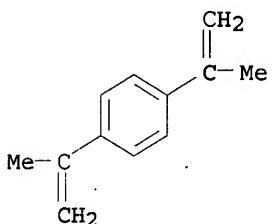
CM 1

CRN 138171-14-9

CMF C32 H28 N2



CM 2

CRN 1605-18-1  
CMF C12 H14CC 37-6 (Plastics Manufacture and Processing)  
Section cross-reference(s): 38, 73IT 306734-14-5  
(influence of fullerene sensitizer on  
electroluminescence polymer hole transporting layer)REFERENCE COUNT: 22 THERE ARE 22 CITED REFERENCES AVAILABLE  
FOR THIS RECORD. ALL CITATIONS AVAILABLE  
IN THE RE FORMAT

L25 ANSWER 37 OF 51 HCPLUS COPYRIGHT 2005 ACS on STN  
 ACCESSION NUMBER: 2001:400123 HCPLUS  
 DOCUMENT NUMBER: 135:202185  
 TITLE: Impact of the metal cathode on the performance  
of polymer light-emitting diodes  
 AUTHOR(S): Stoessel, Matthias; Bernius, M. T.; Wittmann,  
Georg; Heuser, Karsten; Blaessing, Joerg;  
Birnstock, Jan; Rogler, W.; Roth, W.;  
Winnacker, A.; Inbasekaran, Michael; Wu, W.;  
O'Brien, J. J.  
 CORPORATE SOURCE: Siemens AG, ZT MFI, Erlangen, 91052, Germany  
 SOURCE: Proceedings of SPIE-The International Society  
for Optical Engineering (2001), 4105(Organic  
Light-Emitting Materials and Devices IV),  
92-99  
 PUBLISHER: CODEN: PSISDG; ISSN: 0277-786X  
SPIE-The International Society for Optical  
Engineering  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 AB An appropriate choice of the cathode material and the process of  
cathode deposition is a key issue in the development of polymer  
LEDs. The impact of low work function metals on the luminescence

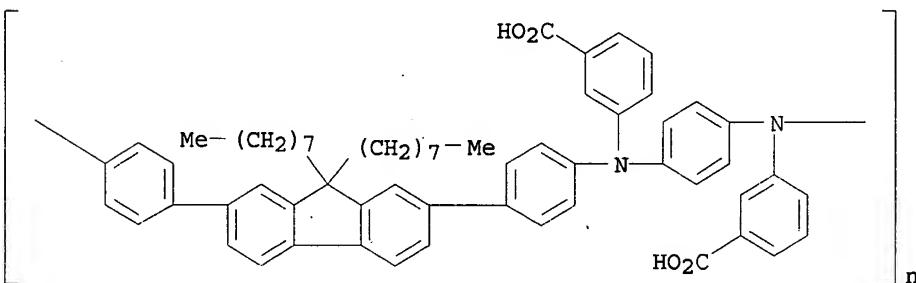
efficiency of thin films of polyfluorene type polymers is reported. Luminescence as well as electroluminescence expts. are presented, and in both cases, a strong correlation between the metal layer thickness and the luminescence efficiency is demonstrated. By means of time-of-flight SIMS, the distribution of the metal contamination within the polymer layers is determined. The results strongly suggest that impurity quenching of excitons by metal atoms inside the polymer layer takes place and strongly affects luminescence and device efficiency.

IT 247922-78-7

(metal cathode impact on performance of LEDs containing)

RN 247922-78-7 HCPLUS

CN Poly[[(3-carboxyphenyl)imino]-1,4-phenylene[(3-carboxyphenyl)imino]-1,4-phenylene(9,9-dioctyl-9H-fluorene-2,7-diyl)-1,4-phenylene] (9CI) (CA INDEX NAME)



CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

Section cross-reference(s): 36, 76

IT 210347-52-7 247922-78-7

(metal cathode impact on performance of LEDs containing)

REFERENCE COUNT: 9 THERE ARE 9 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L25 ANSWER 38 OF 51 HCPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2001:397225 HCPLUS

DOCUMENT NUMBER: 135:26684

TITLE: Distributed Bragg reflector, organic light emitting element, and multicolor light emitting device

INVENTOR(S): Kawase, Takeo

PATENT ASSIGNEE(S): Seiko Epson Corporation, Japan; University of Cambridge

SOURCE: PCT Int. Appl., 28 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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WO 2001039286	A1	20010531	WO 2000-GB4439	2000

1122

W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU,  
 CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID,  
 IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT,  
 LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU,  
 SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ,  
 VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM  
 RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE,  
 CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL,  
 PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR,  
 NE, SN, TD, TG

GB 2356713 A1 20010530 GB 1999-28121  
 1999  
 1126

EP 1151483 A1 20011107 EP 2000-979745  
 2000  
 1122

R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE,  
 MC, PT, IE, SI, LT, LV, FI, RO

JP 2003515769 T2 20030507 JP 2001-540855  
 2000  
 1122

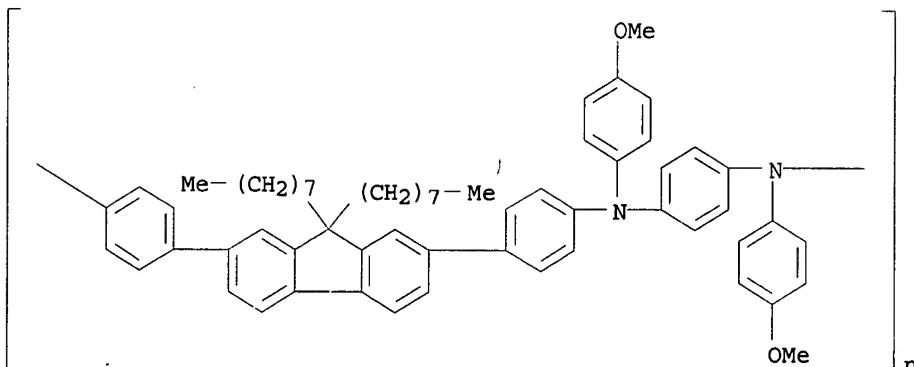
US 6756732 B1 20040629 US 2001-890060  
 2001  
 0831

PRIORITY APPLN. INFO.: GB 1999-28121 A  
 1999  
 1126

WO 2000-GB4439 W  
 2000  
 1122

- AB Distributed Bragg reflectors are described which comprise a stack of alternating layers of a first organic material and a second organic material. The organic materials may be polymers. Organic electroluminescent elements are described which comprise organic electroluminescent materials formed on the distributed Bragg reflectors. Multicolored light-emitting device are also described which comprise a plurality of the light-emitting elements. A method of manufacturing a distributed Bragg reflector is described which entails forming a stack of layers of a first organic material and a second organic material using ink jet technol. Methods of manufacturing an organic electroluminescent light-emitting element are also described which entail providing a transparent substrate, forming a transparent electrode formed on the substrate, forming a distributed Bragg reflector on the transparent electrode, forming an organic electroluminescent light-emitting material on the distributed Bragg reflector, and forming an electrode on the light-emitting material. Multicolored light-emitting devices may be manufactured by a plurality of devices and forming the first and second materials in different thickness layers to provide different mode wavelength areas on the substrate.
- IT 223569-30-0  
 (organic distributed Bragg reflectors and organic light-emitting elements using them and their manufacture)
- RN 223569-30-0 HCPLUS
- CN Poly[[(4-methoxyphenyl)imino]-1,4-phenylene[(4-methoxyphenyl)imino]-1,4-phenylene(9,9-dioctyl-9H-fluorene-2,7-

(diyl)-1,4-phenylene] (9CI) (CA INDEX NAME)



IC ICM H01L051-20

ICS G02B005-18; G02B005-28

CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

Section cross-reference(s): 76

IT 2085-33-8, Tris(8-hydroxyquinolinato)aluminum 9002-89-5,  
Polyvinyl alcohol 126213-51-2, Poly(3,4-ethylenedioxythiophene)  
223569-30-0

(organic distributed Bragg reflectors and organic light-emitting elements using them and their manufacture)

REFERENCE COUNT: 9 THERE ARE 9 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L25 ANSWER 39 OF 51 HCPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2001:376218 HCPLUS

DOCUMENT NUMBER: 135:172770

TITLE: High performance blue light-emitting diodes based on conjugated polymer blends

AUTHOR(S): Palilis, L. C.; Lidzey, D. G.; Redecker, M.; Bradley, D. D. C.; Inbasekaran, M.; Woo, E. P.; Wu, W. W.

CORPORATE SOURCE: Centre for Molecular Materials and Department of Physics and Astronomy, Hicks Building, University of Sheffield, Sheffield, S3 7RH, UK

SOURCE: Synthetic Metals (2001), 121(1-3), 1729-1730  
CODEN: SYMEDZ; ISSN: 0379-6779

PUBLISHER: Elsevier Science S.A.

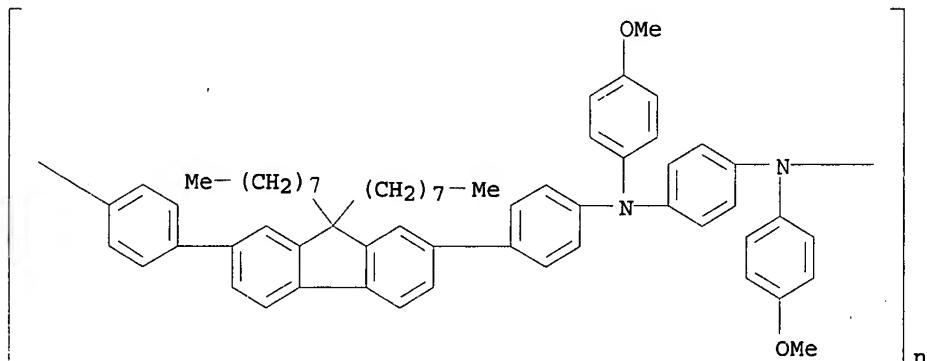
DOCUMENT TYPE: Journal

LANGUAGE: English

AB The authors report on the fabrication and properties of single layer blue light-emitting diodes (LEDs) based on conjugated polymer blends of emissive and hole transport materials. Despite the fact that the photoluminescence quantum efficiency of the blend is lower compared to that of both the host and the guest polymers, an enhancement in both the electroluminescence quantum and power efficiency is seen for the blend. This observation indicates that the whole transporting material leads to a significantly improved hole injection and thus a greatly improved charge carrier balance factor. Optimized single layer blue LEDs

showed a maximum brightness of 6000 Cd/m<sup>2</sup> at 14 V and a maximum external ELQE of 1% (2.1 Cd/A) at 15 Cd/m<sup>2</sup> corresponding to a power efficiency of 1.1 m/W.

IT 223569-30-0  
 (high performance blue light-emitting  
 diodes based on conjugated polymer blends)  
 RN 223569-30-0 HCAPLUS  
 CN Poly[[(4-methoxyphenyl)imino]-1,4-phenylene[(4-methoxyphenyl)imino]-1,4-phenylene(9,9-diethyl-9H-fluorene-2,7-diyl)-1,4-phenylene] (9CI) (CA INDEX NAME)



CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

IT 223569-30-0  
 (high performance blue light-emitting  
 diodes based on conjugated polymer blends)

REFERENCE COUNT: 5 THERE ARE 5 CITED REFERENCES AVAILABLE  
 FOR THIS RECORD. ALL CITATIONS AVAILABLE  
 IN THE RE FORMAT

L25 ANSWER 40 OF 51 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2001:252950 HCAPLUS

DOCUMENT NUMBER: 134:273356

TITLE: Arylamine-substituted vinyl monomer, polymer  
 from the monomer, and organic

electroluminescent device using the polymer  
 Kido, Junji; Uchishiro, Tsuyoshi; Yamada,

Tomohisa; Suzuki, Takayuki

PATENT ASSIGNEE(S): Chemipro Kasei K. K., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 18 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
-----	----	-----	-----	-----
JP 2001098023	A2	20010410	JP 1999-277126	1999 0929

PRIORITY APPLN. INFO.: JP 1999-277126

1999  
0929

OTHER SOURCE(S): MARPAT 134:273356

AB The monomer is that represented as R<sub>1</sub>CH<sub>2</sub>:C-p-C<sub>6</sub>H<sub>4</sub>C(R<sub>2</sub>) (R<sub>3</sub>)NAr<sub>1</sub>Ar<sub>2</sub> [R<sub>1</sub> = H, alkyl; R<sub>2</sub>, R<sub>3</sub> = H, Me, Et; Ar<sub>1</sub>, Ar<sub>2</sub> = (substituted) aromatic group]. The polymer is that having repeating unit corresponding to the above monomer. The organic electroluminescent device uses the above polymer, preferably in a hole-transporting layer. The device shows retention of quality in storage at high temperature because recrystn. or coagulation, shown in conventional low-mol. organic electroluminescent material, prevented in the polymer having high glass-transition temperature

IT 331980-58-6P  
(arylamine-substituted vinyl polymer for organic electroluminescent device)

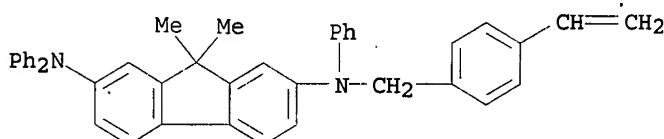
RN 331980-58-6 HCPLUS

CN 9H-Fluorene-2,7-diamine, N-[ (4-ethenylphenyl)methyl]-9,9-dimethyl-N,N',N'-triphenyl-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 331980-57-5

CMF C42 H36 N2



IC ICM C08F012-28

ICS C07C211-54; C07D209-86; H05B033-14; H05B033-22

CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

Section cross-reference(s): 35, 38

IT 331980-50-8P 331980-52-0P 331980-56-4P 331980-58-6P  
(arylamine-substituted vinyl polymer for organic electroluminescent device)

L25 ANSWER 41 OF 51 HCPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2000:707427 HCPLUS

DOCUMENT NUMBER: 133:288606

TITLE: Electroluminescent component and production thereof

INVENTOR(S): Kanbe, Sadao; Seki, Shunichi

PATENT ASSIGNEE(S): Seiko Epson Corp., Japan

SOURCE: PCT Int. Appl., 50 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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WO 2000059267	A1	20001005	WO 2000-JP1962	

2000  
0329

W: CN, JP, KR, US

RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU,  
MC, NL, PT, SE

EP 1083775 A1 20010314 EP 2000-912924

2000  
0329

R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE,  
MC, PT, IE, FI

TW 508975 B 20021101 TW 2000-89105849

2000  
0329

US 6878312 B1 20050412 US 2000-701468

2000  
0329

PRIORITY APPLN. INFO.:

JP 1999-86944

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1999  
0329

JP 1999-250486

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1999  
0903

WO 2000-JP1962

W  
2000  
0329

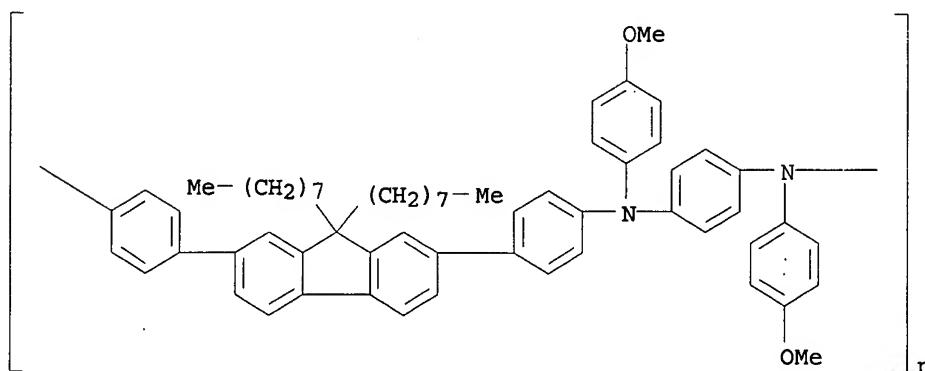
AB The invention refers to an electroluminescent component, suitable for use in display device, and its production wherein a benzene derivative with at least one substituted group with at least 3 C is used as a solvent in the ink jet printing method in order to prevent the clogging of the jets and separation of components during spraying.

IT 223569-30-0

(electroluminescent component and production thereof)

RN 223569-30-0 HCPLUS

CN Poly[[(4-methoxyphenyl)imino]-1,4-phenylene[(4-methoxyphenyl)imino]-1,4-phenylene(9,9-dioctyl-9H-fluorene-2,7-diyl)-1,4-phenylene] (9CI) (CA INDEX NAME)



IC ICM H05B033-14

ICS H05B033-10; C09D011-00; C09K011-06

CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related

Properties)

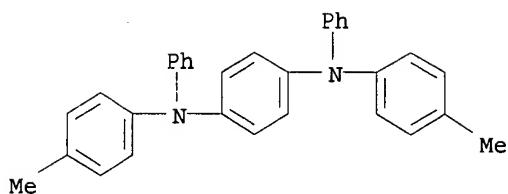
IT 71-43-2, Benzene, uses 91-17-8, Decalin 98-82-8, Cumene 104-51-8, Butylbenzene 108-67-8, Mesitylene, uses 108-88-3, Toluene, uses 119-64-2, Tetralin 123-01-3, Dodecylbenzene 198-55-0, Perylene 488-23-3, 1,2,3,4-Tetramethyl benzene 517-51-1, Rubrene 527-53-7, 1,2,3,5-Tetramethyl benzene 538-68-1, Pentyl benzene 827-52-1, Cyclohexylbenzene 1047-16-1, Quinacridone 1330-20-7, Xylene, uses 1499-10-1, 9,10-Diphenyl anthracene 7385-67-3, Nile Red 7429-90-5, Aluminum, uses 7440-70-2, Calcium, uses 7631-86-9, Silica, uses 7789-24-4, Lithium fluoride, uses 12223-84-6, Kayalon Fast Yellow GL 25067-59-8, Polyvinyl carbazole 25155-15-1, Cymene 25233-34-5, Polythiophene 25340-17-4, Diethylbenzene 25619-60-7, Tetramethyl benzene 27236-84-6, Tetraphenylbutadiene 38215-36-0, Coumarin 6 50926-11-9, ITO 64800-20-0, Dibutylbenzene 73466-99-6, Dipentylbenzene 80280-27-9 95270-88-5, Polyfluorene 133019-09-7, Poly(9,9-dihexyl-9H-fluorene-2,7-diyl) 195456-48-5, Poly(9,9-dioctyl-9H-fluorene-2,7-diyl) 210347-52-7 220797-16-0 223569-30-0  
(electroluminescent component and production thereof)

REFERENCE COUNT: 10 THERE ARE 10 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L25 ANSWER 42 OF 51 HCPLUS COPYRIGHT 2005 ACS on STN  
 ACCESSION NUMBER: 2000:685089 HCPLUS  
 DOCUMENT NUMBER: 133:350896  
 TITLE: Synthesis of new hole transport polymers based on N,N'-diphenyl-N,N'-bis(4-methylphenyl)-1,4-phenylenediamine  
 AUTHOR(S): Wang, Xiaoqing; Chen, Zhijian; Ogino, Kenji; Sato, Hisaya; Miyata, Seizo; Tan, Huiming  
 CORPORATE SOURCE: Faculty of Technology, Tokyo University of Agriculture and Technology, Tokyo, 184-8588, Japan  
 SOURCE: Polymer Journal (Tokyo) (2000), 32(9), 778-783  
 CODEN: POLJB8; ISSN: 0032-3896  
 PUBLISHER: Society of Polymer Science, Japan  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 AB New hole transport polymers were prepared by polyaddn. of N,N'-diphenyl-N,N'-bis(4-methylphenyl)-1,4-phenylenediamine with divinyl or diisopropenylbenzene and were characterized by 1H NMR, DSC, UV absorption spectra and cyclic voltammetry. These polymers exhibit high glass transition temps. and low oxidation potentials. Two-layer electroluminescent (EL) devices, in which the polymers were spin cast on ITO anode as the hole transport layer and aluminum tris(8-hydroxyquinoline) (Alq) was used as the emitting layer, gave a high brightness of above 10000 cd m<sup>-2</sup> with an operating voltage of less than 15 V.  
 IT 306734-13-4P 306734-14-5P  
 (preparation of hole transport polymers based on diphenylbis(methylphenyl)phenylenediamine and electroluminescent devices)  
 RN 306734-13-4 HCPLUS  
 CN 1,4-Benzenediamine, N,N'-bis(4-methylphenyl)-N,N'-diphenyl-, polymer with 1,4-diethenylbenzene (9CI) (CA INDEX NAME)

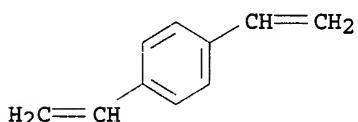
CM 1

CRN 138171-14-9  
 CMF C32 H28 N2



CM 2

CRN 105-06-6  
 CMF C10 H10

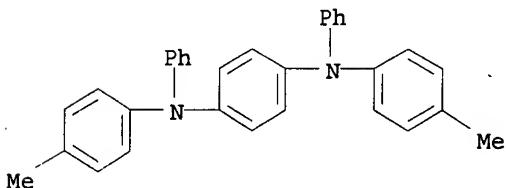


RN 306734-14-5 HCPLUS

CN 1,4-Benzenediamine, N,N'-bis(4-methylphenyl)-N,N'-diphenyl-,  
 polymer with 1,4-bis(1-methylethenyl)benzene (9CI) (CA INDEX  
 NAME)

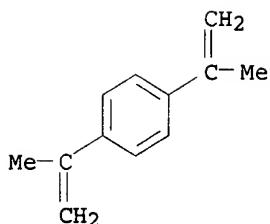
CM 1

CRN 138171-14-9  
 CMF C32 H28 N2



CM 2

CRN 1605-18-1  
 CMF C12 H14



CC 37-3 (Plastics Manufacture and Processing)  
Section cross-reference(s): 38, 73

IT 306734-13-4P 306734-14-5P  
(preparation of hole transport polymers based on diphenylbis(methylphenyl)phenylenediamine and electroluminescent devices)

REFERENCE COUNT: 25 THERE ARE 25 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L25 ANSWER 43 OF 51 HCPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2000:612657 HCPLUS

DOCUMENT NUMBER: 133:185304

TITLE: Organic light emitters using active material blends

INVENTOR(S): Burroughes, Jeremy Henley; Hughes, Peter William

PATENT ASSIGNEE(S): Cambridge Display Technology Limited, UK

SOURCE: Brit. UK Pat. Appl., 30 pp.

CODEN: BAXXDU

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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GB 2340304	A1	20000216	GB 1998-18376	1998 0821
PRIORITY APPLN. INFO.:			GB 1998-18376	1998 0821

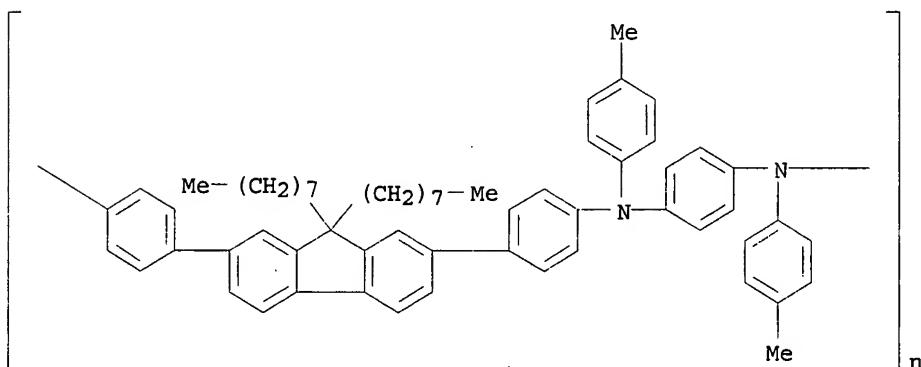
AB Light-emitting devices are described which comprise a first charge carrier injecting layer for injecting pos. charge carriers; a second charge carrier injecting layer for injecting neg. charge carriers; and a light-emitting layer located between the charge carrier injecting layers and comprising a mixture of at least two electroluminescent organic materials, the relative proportions of the the organic materials in the light-emitting layer influencing the emission color of the light-emitting layer. Methods for tailoring the emission color of a light-emitting material are described which entail mixing a first electroluminescent organic material with a second electroluminescent organic material in a ratio so as to achieve the desired emission color.

IT 223569-29-7 288263-79-6 288263-90-1

(organic light-emitting devices with active  
layers formed from blends for emission color control)

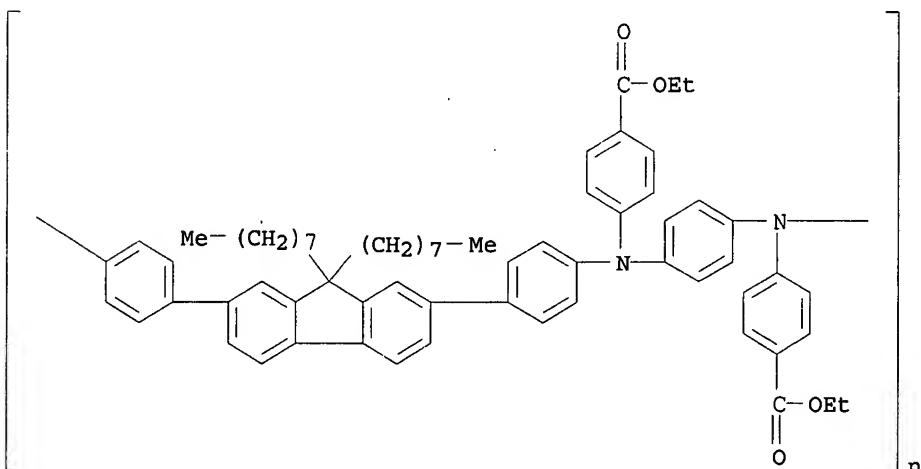
RN 223569-29-7 HCPLUS

CN Poly[[(4-methylphenyl)imino]-1,4-phenylene[(4-methylphenyl)imino]-  
1,4-phenylene(9,9-dioctyl-9H-fluorene-2,7-diyl)-1,4-phenylene]  
(9CI) (CA INDEX NAME)



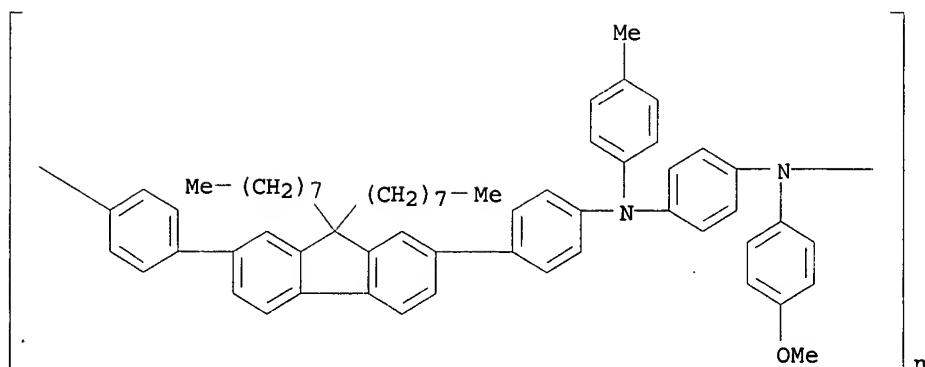
RN 288263-79-6 HCPLUS

CN Poly[[(4-(ethoxycarbonyl)phenyl)imino]-1,4-phenylene[(4-  
(ethoxycarbonyl)phenyl)imino]-1,4-phenylene(9,9-dioctyl-9H-  
fluorene-2,7-diyl)-1,4-phenylene] (9CI) (CA INDEX NAME)



RN 288263-90-1 HCPLUS

CN Poly[[(4-methoxyphenyl)imino]-1,4-phenylene[(4-methylphenyl)imino]-  
1,4-phenylene(9,9-dioctyl-9H-fluorene-2,7-diyl)-1,4-phenylene]  
(9CI) (CA INDEX NAME)



IC ICM H01L051-20  
ICS H05B033-14

CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

Section cross-reference(s) : 38

IT 198-55-0, Perylene 123863-98-9 123864-00-6 166534-30-1,  
MEH-CN-PPV 223569-29-7 288263-28-5 288263-79-6  
288263-89-8 288263-90-1 288264-02-8  
(organic light-emitting devices with active  
layers formed from blends for emission color control)

L25 ANSWER 44 OF 51 HCPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2000:377697 HCPLUS

DOCUMENT NUMBER: 133:127040

TITLE: Bright and efficient blue and green  
light-emitting diodes based on conjugated  
polymer blends

AUTHOR(S): Palilis, L. C.; Lidzey, D. G.; Redecker, M.;  
Bradley, D. D. C.; Inbasekaran, M.; Woo, E.  
P.; Wu, W. W.

CORPORATE SOURCE: Department of Physics and Astronomy, Centre  
for Molecular Materials, University of  
Sheffield, Sheffield, S3 7RH, UK

SOURCE: Synthetic Metals (2000), 111-112, 159-163  
CODEN: SYMEDZ; ISSN: 0379-6779

PUBLISHER: Elsevier Science S.A.

DOCUMENT TYPE: Journal

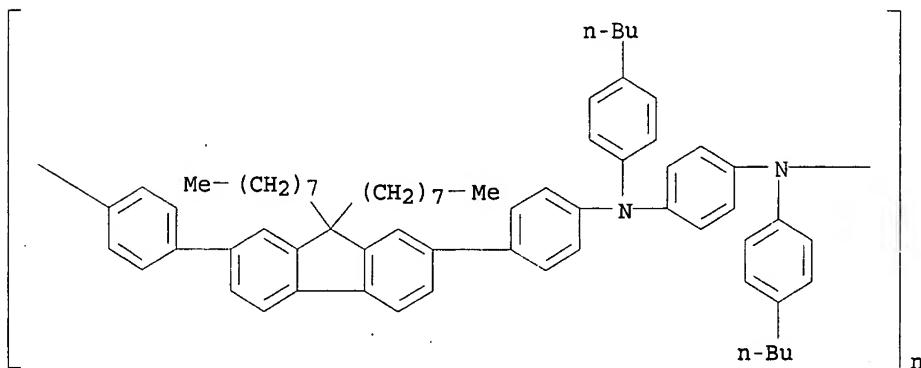
LANGUAGE: English

AB The authors report the use of green and blue fluorene conjugated polymers doped with hole transport materials consisting of triarylamine copolymers to fabricate bright and efficient blue and green single-layer light-emitting diodes (LEDs). These blends show enhanced quantum and power efficiency, much higher brightness and current densities and lower turn on and operating voltages compared with undoped devices. Optimized blue emission devices exhibited a maximum brightness of 1550 cd/m<sup>2</sup>, a maximum external electroluminescence quantum efficiency of 0.9 cd/A or 0.4% and a maximum power efficiency of 0.3 lm/W. Optimized green emission devices showed a maximum brightness of 7400 cd/m<sup>2</sup>, a maximum external electroluminescence quantum yield of 0.9% or 2.75 cd/A and a maximum power efficiency of 0.64 lm/W at high brightness.

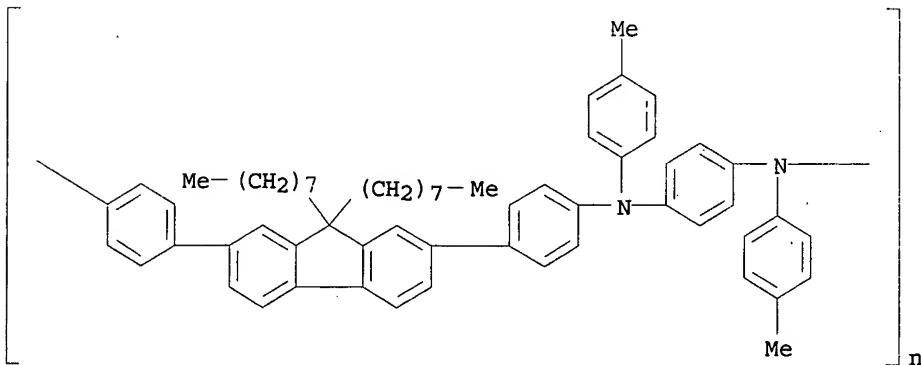
IT 223569-28-6 223569-29-7  
(bright and efficient blue and green light-

emitting diodes based on conjugated polymer blends)

RN 223569-28-6 HCAPLUS  
 CN Poly[[(4-butylphenyl)imino]-1,4-phenylene[(4-butylphenyl)imino]-  
 1,4-phenylene(9,9-dioctyl-9H-fluorene-2,7-diyl)-1,4-phenylene]  
 (9CI) (CA INDEX NAME)



RN 223569-29-7 HCAPLUS  
 CN Poly[[(4-methylphenyl)imino]-1,4-phenylene[(4-methylphenyl)imino]-  
 1,4-phenylene(9,9-dioctyl-9H-fluorene-2,7-diyl)-1,4-phenylene]  
 (9CI) (CA INDEX NAME)



CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

Section cross-reference(s): 36

IT 123864-00-6 223569-28-6 223569-29-7

(bright and efficient blue and green light-emitting diodes based on conjugated polymer blends)

REFERENCE COUNT: 12 THERE ARE 12 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L25 ANSWER 45 OF 51 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1999:691147 HCAPLUS

DOCUMENT NUMBER: 131:323070

TITLE: Fluorene-containing polymers and electroluminescent devices therefrom

INVENTOR(S) : Woo, Edmund P.; Bernius, Mark T.; Inbasekaran, Michael; Wu, Weishi  
 PATENT ASSIGNEE(S) : The Dow Chemical Company, USA  
 SOURCE: PCT Int. Appl., 26 pp.  
 CODEN: PIXXD2  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 4  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9954385	A1	19991028	WO 1999-US7768	1999 0409
			W: CA, CN, JP, KR, SG RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE	
US 6309763	B1	20011030	US 1998-63615	1998 0421
CA 2294485	AA	19991028	CA 1999-2294485	1999 0409
EP 988337	A1	20000329	EP 1999-918475	1999 0409
EP 988337	B1	20030604		
	R: DE, FR, GB, IT, NL, SE, FI			
JP 2002506481	T2	20020226	JP 1999-553048	1999 0409
PRIORITY APPLN. INFO.:			US 1998-63615	A 1998 0421
			US 1997-861469	A2 1997 0521
			WO 1999-US7768	W 1999 0409

GI

\* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT  
 \*

AB The title copolymer comprises 10-90% I and 10-90% of groups selected from II, III, and IV and mixts.; wherein R1 is H, C1-20 hydrocarbyl or C1-20 hydrocarbyl containing one or more S, N, O, P or Si atoms, C4-16 hydrocarbyl carboxyloxy, C4-16 aryl(trialkylsiloxy) or both R1 may form with the 9-carbon on the fluorene ring a C5-20 cycloaliph. structure or a C4-20 cycloaliph. structure containing one or more heteroatoms of S, N, or O; R2 is

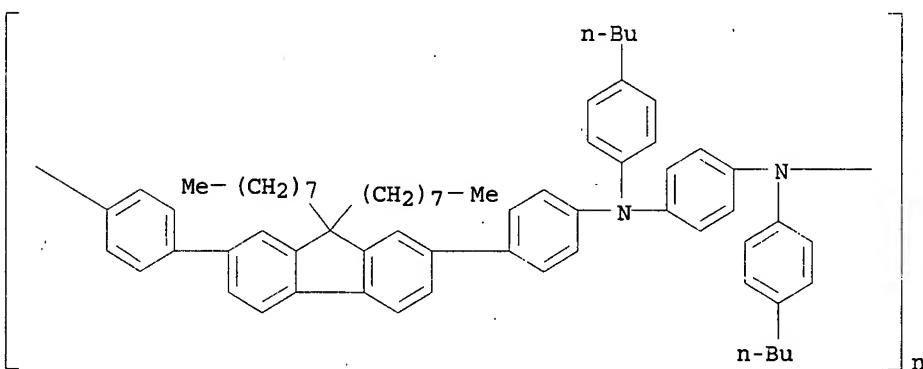
independently in each occurrence C1-20 hydrocarbyl, C1-20 hydrocarbyloxy, C1-20 thioether, C1-20 hydrocarbylcarbonyloxy or cyano; R3 is independently in each occurrence carboxyl, C1-20 alkyl, C1-20 alkoxy or a group of the formula -CO<sub>2</sub>R<sub>4</sub> wherein R<sub>4</sub> is a C1-20 alkyl; and a and b are 0 to 3.

IT 223569-28-6 223569-30-0 247922-76-5

247922-78-7  
(fluorene-containing polymers and electroluminescent devices therefrom)

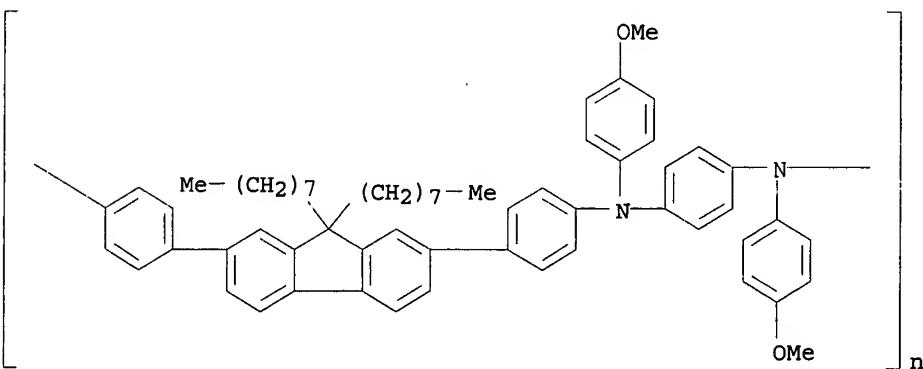
RN 223569-28-6 HCPLUS

CN Poly[[(4-butylphenyl)imino]-1,4-phenylene[(4-butylphenyl)imino]-1,4-phenylene(9,9-dioctyl-9H-fluorene-2,7-diyl)-1,4-phenylene] (9CI) (CA INDEX NAME)



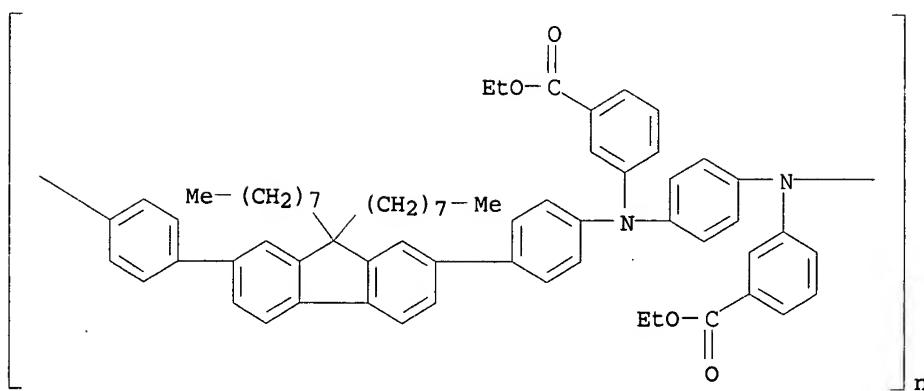
RN 223569-30-0 HCPLUS

CN Poly[[(4-methoxyphenyl)imino]-1,4-phenylene[(4-methoxyphenyl)imino]-1,4-phenylene(9,9-dioctyl-9H-fluorene-2,7-diyl)-1,4-phenylene] (9CI) (CA INDEX NAME)



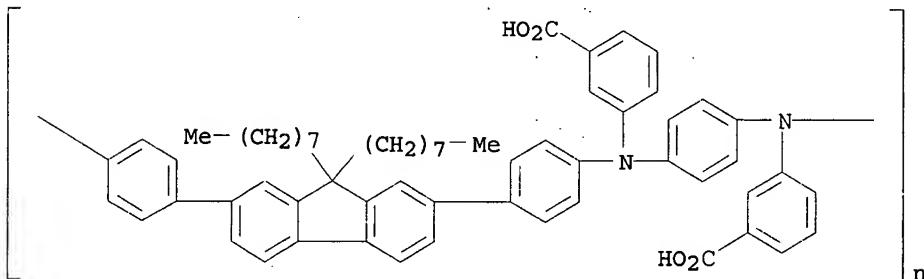
RN 247922-76-5 HCPLUS

CN Poly[[(3-(ethoxycarbonyl)phenyl)imino]-1,4-phenylene[(3-(ethoxycarbonyl)phenyl)imino]-1,4-phenylene(9,9-dioctyl-9H-fluorene-2,7-diyl)-1,4-phenylene] (9CI) (CA INDEX NAME)



RN 247922-78-7 HCAPLUS

CN Poly[[(3-carboxyphenyl)imino]-1,4-phenylene[(3-carboxyphenyl)imino]-1,4-phenylene(9,9-dioctyl-9H-fluorene-2,7-diyl)-1,4-phenylene] (9CI) (CA INDEX NAME)



IC ICM C08G073-02

ICS C08G061-00; C09K011-06; H05B033-14

CC 35-5 (Chemistry of Synthetic High Polymers)

Section cross-reference(s) : 73

IT 220797-16-0 223569-28-6 223569-30-0

247922-75-4 247922-76-5 247922-77-6

247922-78-7 247922-79-8

(fluorene-containing polymers and electroluminescent devices therefrom)

REFERENCE COUNT: 1 THERE ARE 1 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L25 ANSWER 46 OF 51 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1999:614298 HCAPLUS

DOCUMENT NUMBER: 131:250201

TITLE: Electroluminescent devices

INVENTOR(S): Burroughes, Jeremy Henley; Friend, Richard Henry; Bright, Christopher John; Lacey, David John; Devine, Peter

PATENT ASSIGNEE(S): Cambridge Display Technology Ltd., UK

SOURCE: PCT Int. Appl., 71 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

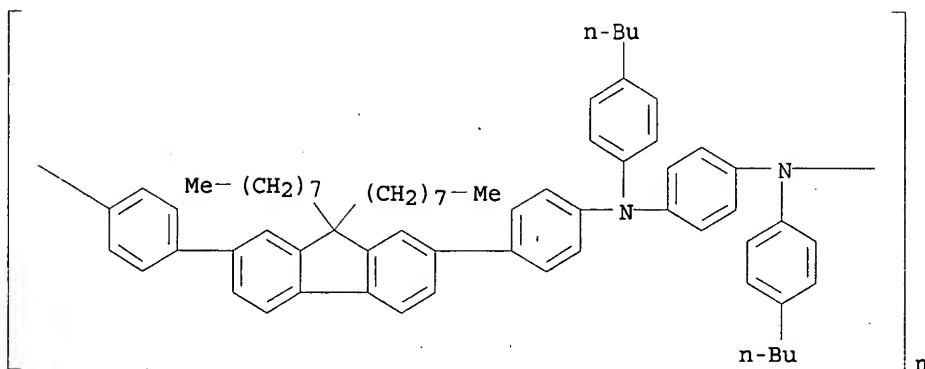
FAMILY ACC. NUM. COUNT: 6

## PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9948160	A1	19990923	WO 1999-GB741	1999 0312
W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, GM, HR, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, SD, SL, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
AU 9927402	A1	19991011	AU 1999-27402	1999 0312
EP 1062703	A1	20001227	EP 1999-907774	1999 0312
R: DE, FR, GB, NL JP 2002507825	T2	20020312	JP 2000-537271	1999 0312
US 6897473	B1	20050524	US 2000-508367	1999 0312
TW 525409	B	20030321	TW 1999-88108773	1999 0527
CA 2367388	AA	20000921	CA 2000-2367388	2000 0313
WO 2000055927	A1	20000921	WO 2000-GB911	2000 0313
W: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
EP 1169741	A1	20020109	EP 2000-909497	2000 0313
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO JP 2002539292	T2	20021119	JP 2000-605274	2000 0313

US 6861502	B1	20050301	US 2002-936295	2002 0212
US 2004075381	A1	20040422	US 2003-682204	2003 1010
JP 2004247313	A2	20040902	JP 2004-98825	2004 0330
PRIORITY APPLN. INFO.:			GB 1998-5476	A 1998 0313
			JP 2000-537271	A3 1999 0312
			WO 1999-GB741	W 1999 0312
			WO 2000-GB911	W 2000 0313
			US 2002-508367	A1 2002 0103

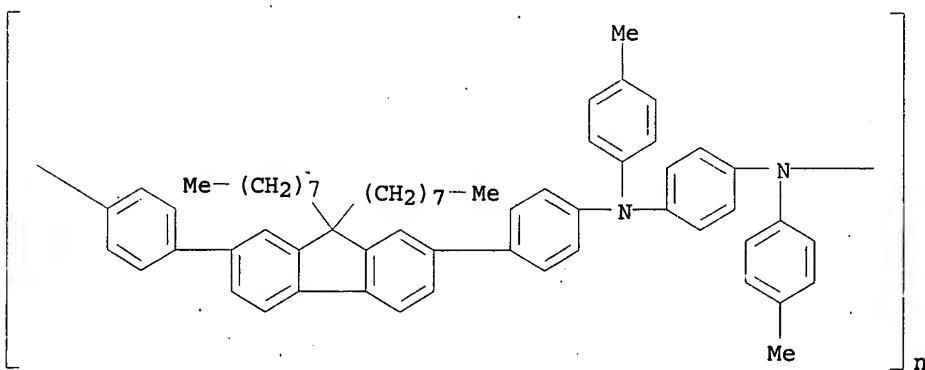
- AB Electroluminescent devices are described which comprise a first charge carrier injecting layer for injecting pos. charge carriers; a second charge carrier injecting layer for injecting neg. charge carriers; and a light-emitting layer located between the charge carrier injecting layers and comprising a mixture of a first component for accepting pos. charge carriers from the first charge carrier injecting layer, a second component for accepting neg. charge carriers from the second charge carrier injecting layer, and a third organic light-emitting component for generating light as a result of combination of charge carriers from the first and second components; ≥1 of the first, second, and third components forming a type II semiconductor interface with another of the first, second, and third components. The first and the second and/or third components may form a copolymer. Methods for fabricating the devices by sequential formation of the layers are also described.
- IT 223569-28-6  
 (electroluminescent devices with junctions formed  
 between components in the active layer and their fabrication)
- RN 223569-28-6 HCPLUS
- CN Poly[[(4-butylphenyl)imino]-1,4-phenylene[(4-butylphenyl)imino]-  
 1,4-phenylene(9,9-dioctyl-9H-fluorene-2,7-diyl)-1,4-phenylene]  
 (9CI) (CA INDEX NAME)



IT 223569-29-7 223569-30-0

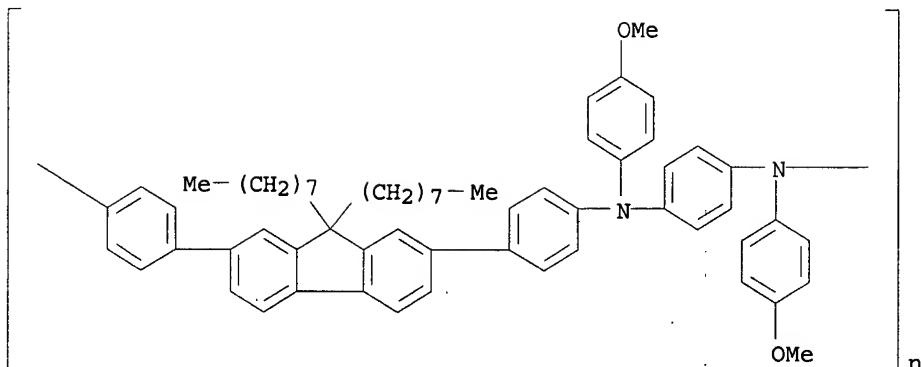
(electroluminescent devices with junctions formed  
between components in the active layer and their fabrication)

RN 223569-29-7 HCPLUS

CN Poly[[(4-methylphenyl)imino]-1,4-phenylene[(4-methylphenyl)imino]-  
1,4-phenylene(9,9-dioctyl-9H-fluorene-2,7-diyl)-1,4-phenylene]  
(9CI) (CA INDEX NAME)

RN 223569-30-0 HCPLUS

CN Poly[[(4-methoxyphenyl)imino]-1,4-phenylene[(4-  
methoxyphenyl)imino]-1,4-phenylene(9,9-dioctyl-9H-fluorene-2,7-  
diyl)-1,4-phenylene] (9CI) (CA INDEX NAME)



IC ICM H01L051-20  
 CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)  
 Section cross-reference(s): 38, 76  
 IT 2085-33-8, Tris(8-hydroxyquinolinato)aluminum 223569-28-6  
     (electroluminescent devices with junctions formed  
     between components in the active layer and their fabrication)  
 IT 96638-49-2, Polyphenylene vinylene 123864-00-6 138184-36-8,  
     MEH-PPV 210347-52-7 220797-16-0 223569-29-7  
     223569-30-0  
     (electroluminescent devices with junctions formed  
     between components in the active layer and their fabrication)  
 REFERENCE COUNT: 5 THERE ARE 5 CITED REFERENCES AVAILABLE  
     FOR THIS RECORD. ALL CITATIONS AVAILABLE  
     IN THE RE FORMAT

L25 ANSWER 47 OF 51 HCPLUS COPYRIGHT 2005 ACS on STN  
 ACCESSION NUMBER: 1999:490262 HCPLUS  
 DOCUMENT NUMBER: 131:163351  
 TITLE: Electrophotographic photoreceptor with surface  
     layer containing polymer having arylamine and  
     siloxane structures  
 INVENTOR(S): Tanaka, Takakazu; Hirano, Hidetoshi  
 PATENT ASSIGNEE(S): Canon K. K., Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 17 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

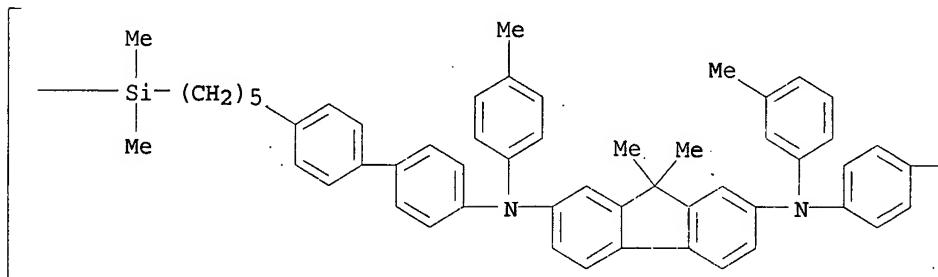
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
-----	-----	-----	-----	-----
JP 11212290	A2	19990806	JP 1998-16777	1998 0129
PRIORITY APPLN. INFO.:				JP 1998-16777
				1998 0129

AB The title photoreceptor comprises a conductive support coated with a photosensitive layer of which the surface layer containing a

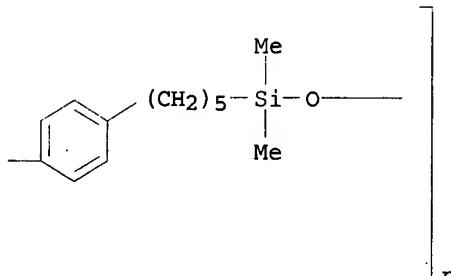
straight-chain resin which has charge-transporting ability and contains a repeating unit having arylamine and siloxane structures. The photoreceptor shows high mech. strength, photosensitivity, and durability in repeated use.

- IT 237426-10-7 237426-13-0  
 (electrophotog. photoreceptor with surface layer containing polymer having arylamine and siloxane structures)
- RN 237426-10-7 HCAPLUS
- CN Poly[oxy(dimethylsilylene)-1,5-pentanediyl[1,1'-biphenyl]-4,4'-diyl[(3-methylphenyl)imino](9,9-dimethyl-9H-fluorene-2,7-diyl)[(4-methylphenyl)imino][1,1'-biphenyl]-4,4'-diyl-1,5-pentanediyl(dimethylsilylene)] (9CI) (CA INDEX NAME)

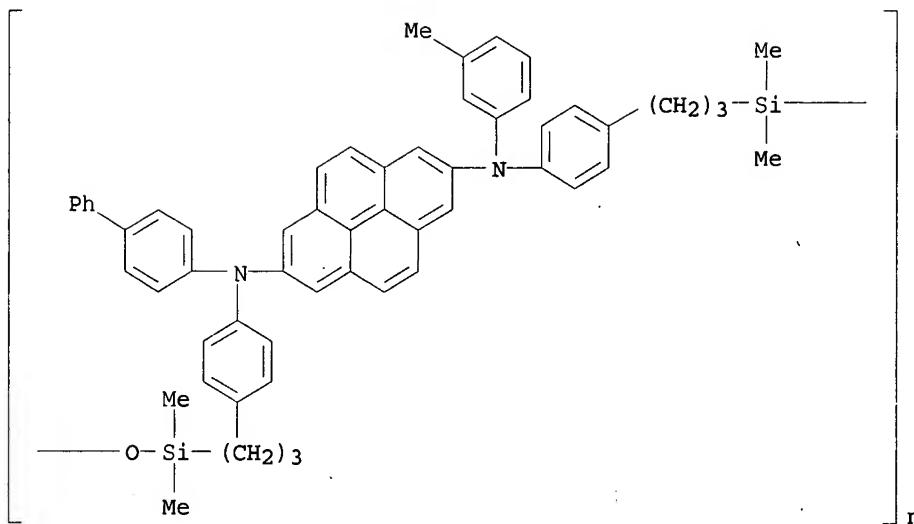
PAGE 1-A



PAGE 1-B



- RN 237426-13-0 HCAPLUS
- CN Poly[oxy(dimethylsilylene)-1,3-propanediyl-1,4-phenylene([1,1'-biphenyl]-4-ylimino)-2,7-pyrenediyl[(3-methylphenyl)imino]-1,4-phenylene-1,3-propanediyl(dimethylsilylene)] (9CI) (CA INDEX NAME)



IC ICM G03G005-147  
 CC 74-3 (Radiation Chemistry, Photochemistry, and Photographic and  
 Other Reprographic Processes)  
 Section cross-reference(s) : 38  
 IT 237426-07-2 237426-08-3 237426-09-4 237426-10-7  
 237426-11-8 237426-12-9 237426-13-0 237426-14-1  
 237426-15-2 237426-16-3 237426-18-5  
 (electrophotog. photoreceptor with surface layer  
 containing polymer having arylamine and siloxane structures)

L25 ANSWER 48 OF 51 HCPLUS COPYRIGHT 2005 ACS on STN  
 ACCESSION NUMBER: 1998:758676 HCPLUS  
 DOCUMENT NUMBER: 130:73811  
 TITLE: Styryl-containing polymer, its manufacture,  
 and organic electroluminescent device,  
 electrophotographic photoreceptor, and  
 hole-transporting material using it  
 INVENTOR(S): Ueda, Hideaki; Kitahora, Takeshi; Nozaki,  
 Takeshi  
 PATENT ASSIGNEE(S): Minolta Camera Co., Ltd., Peop. Rep. China  
 SOURCE: Jpn. Kokai Tokkyo Koho, 21 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 2  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 10310635	A2	19981124	JP 1997-119192	1997 0509
US 6066712	A	20000523	US 1998-74914	1998 0508
PRIORITY APPLN. INFO.:			JP 1997-119192	A

1997  
0509

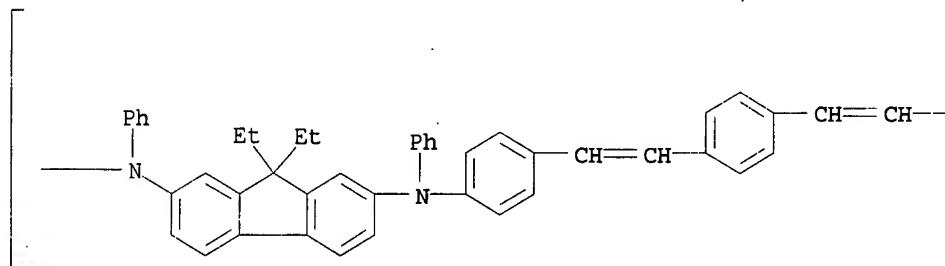
JP 1997-119194

A  
1997  
0509

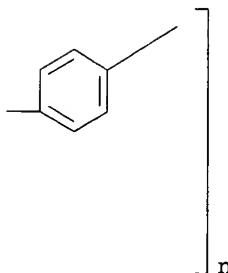
**AB** The styryl-containing polymer is represented by  $[Ar_1CH:CHAr_2N(Ar_3)[Ar_5N(Ar_6)]_mAr_4CH:CH]_n$  ( $Ar_1-2$ ,  $Ar_4$  = arylene;  $Ar_5$  = arylene, 2-valent condensed polycyclic group;  $Ar_3$ ,  $Ar_6$  = alkyl, aralkyl, aryl;  $Ar_1-6$  may be substituted;  $m$  = 0-3;  $n$  = natural number). The above polymer is manufactured by the reaction between a P compound  $XCH_2Ar_1CH_2X$  [ $X$  =  $PO(OR_1)_2$  or  $PR_2Cl$ ;  $R_1$  = lower alkyl;  $R_2$  = cycloalkyl, aryl;  $Y$  = halo] and an aldehyde compound  $OCHAr_2N(Ar_3)[Ar_5N(Ar_6)]_mAr_4CHO$ . The electroluminescent device contains the polymer in  $\geq 1$  organic compound thin layer including a light-emitting layer and the photoreceptor contains the polymer as a charge-transporting material. The hole-transporting material composed of the polymer is also claimed. The styryl-containing polymer shows good performance in charge-transporting and optical conductivity even after repeated use.

**IT** 217632-31-0P  
 (styryl-containing polymer as charge-transporting material for organic electroluminescent device and electrophotographic photoreceptor)  
**RN** 217632-31-0 HCPLUS  
**CN** Poly[(phenylimino)(9,9-diethyl-9H-fluorene-2,7-diyl)(phenylimino)-1,4-phenylene-1,2-ethenediyl-1,4-phenylene-1,2-ethenediyl-1,4-phenylene] (9CI) (CA INDEX NAME)

PAGE 1-A

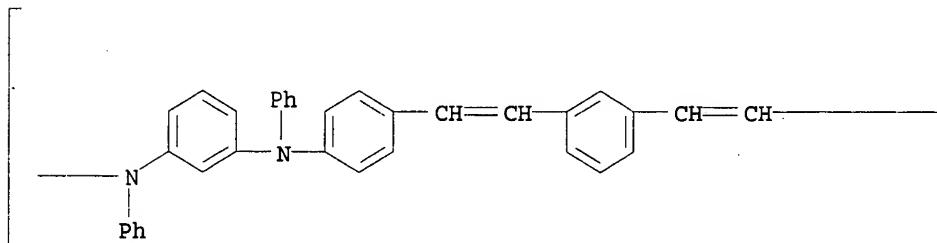


PAGE 1-B

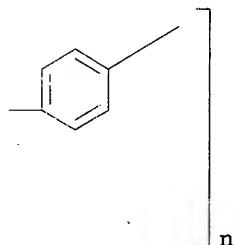


IT 217632-37-6 217632-38-7 217632-39-8  
 217632-40-1 217632-41-2 217632-47-8  
 217632-48-9 217632-49-0  
 (styryl-containing polymer as charge-transporting material for organic  
 electroluminescent device and **electrophotog.**  
**photoreceptor)**  
 RN 217632-37-6 HCPLUS  
 CN Poly[(phenylimino)-1,3-phenylene(phenylimino)-1,4-phenylene-1,2-  
 ethenediyl-1,3-phenylene-1,2-ethenediyl-1,4-phenylene] (9CI) (CA  
 INDEX NAME)

PAGE 1-A

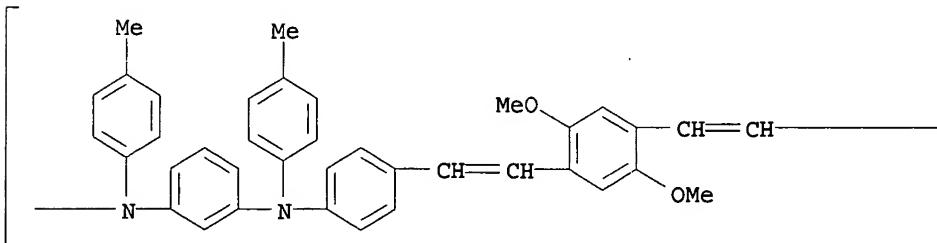


PAGE 1-B

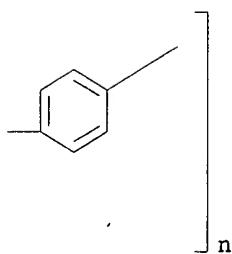


RN 217632-38-7 HCPLUS  
 CN Poly[[(4-methylphenyl)imino]-1,3-phenylene[(4-methylphenyl)imino]-  
 1,4-phenylene-1,2-ethenediyl(2,5-dimethoxy-1,4-phenylene)-1,2-  
 ethenediyl-1,4-phenylene] (9CI) (CA INDEX NAME)

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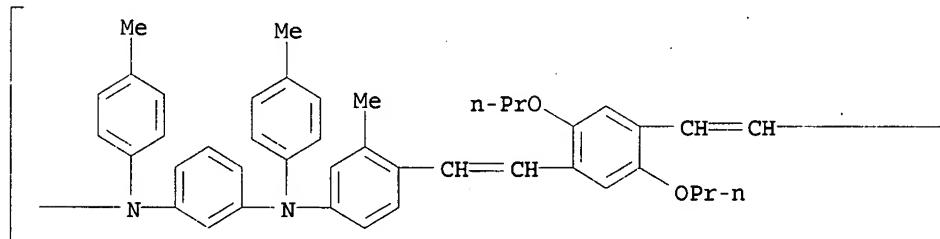
PAGE 1-B



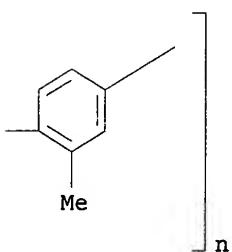
RN 217632-39-8 HCPLUS

CN Poly[[(4-methylphenyl)imino]-1,3-phenylene][(4-methylphenyl)imino](3-methyl-1,4-phenylene)-1,2-ethenediyl(2,5-dipropoxy-1,4-phenylene)-1,2-ethenediyl(2-methyl-1,4-phenylene)] (9CI) (CA INDEX NAME)

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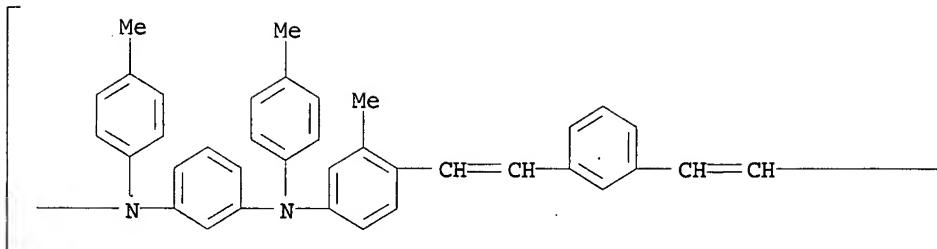
PAGE 1-B



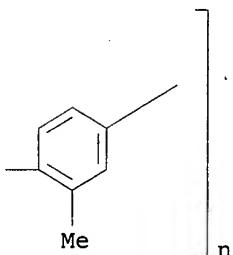
RN 217632-40-1 HCPLUS

CN Poly[[(4-methylphenyl)imino]-1,3-phenylene][(4-methylphenyl)imino](3-methyl-1,4-phenylene)-1,2-ethenediyl-1,3-phenylene-1,2-ethenediyl(2-methyl-1,4-phenylene)] (9CI) (CA INDEX NAME)

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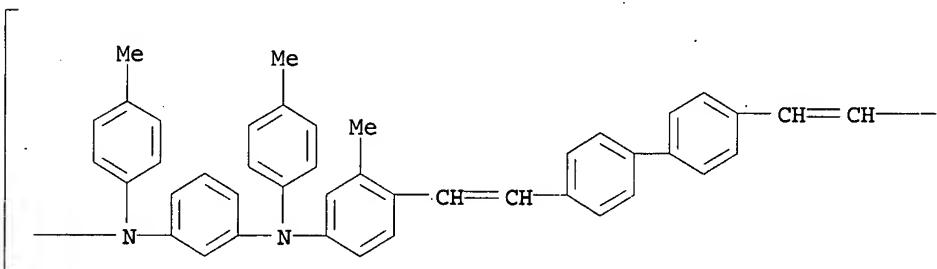
PAGE 1-B



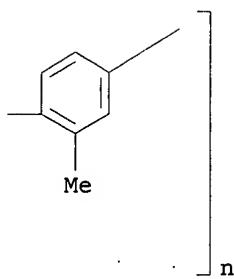
RN 217632-41-2 HCAPLUS

CN Poly[[(4-methylphenyl)imino]-1,3-phenylene[(4-methylphenyl)imino](3-methyl-1,4-phenylene)-1,2-ethenediyl[1,1'-biphenyl]-4,4'-diyl-1,2-ethenediyl(2-methyl-1,4-phenylene)] (9CI)  
(CA INDEX NAME)

PAGE 1-A



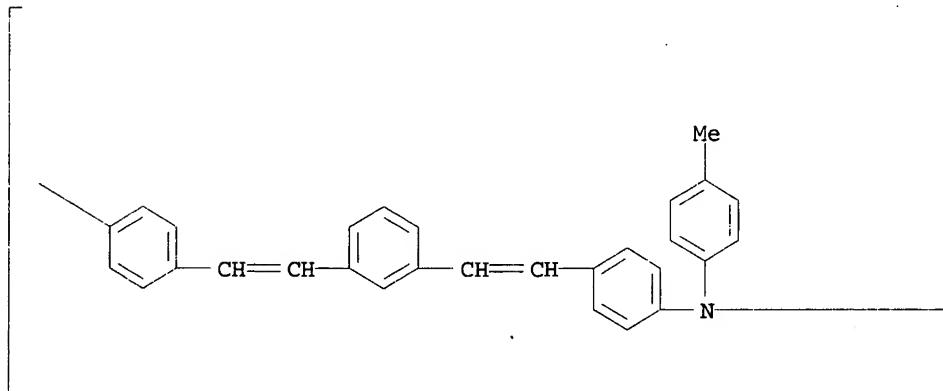
PAGE 1-B



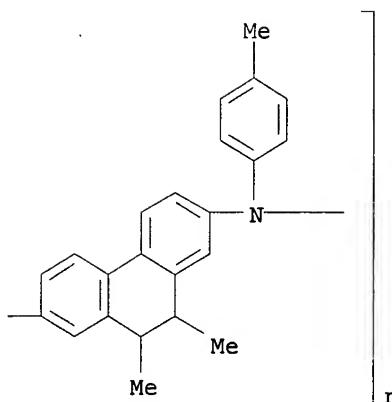
RN 217632-47-8 HCAPLUS

CN Poly[[(4-methylphenyl)imino](9,10-dihydro-9,10-dimethyl-2,7-phenanthrenediyl)[(4-methylphenyl)imino]-1,4-phenylene-1,2-ethenediyl-1,3-phenylene-1,2-ethenediyl-1,4-phenylene] (9CI) (CA INDEX NAME)

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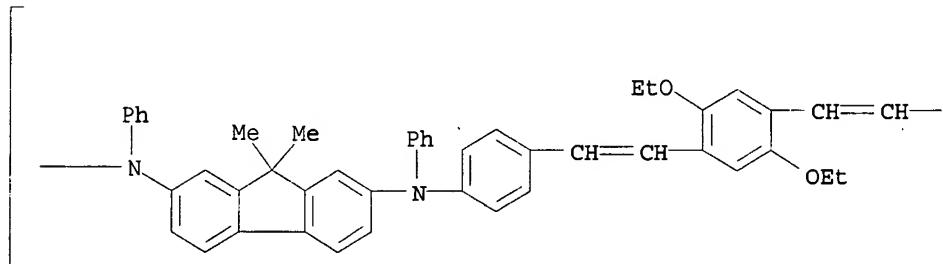
PAGE 1-B



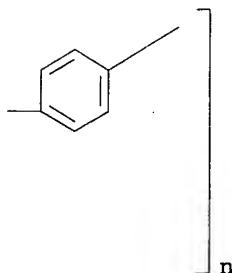
RN 217632-48-9 HCAPLUS

CN Poly[(phenylimino)(9,9-dimethyl-9H-fluorene-2,7-diyl)(phenylimino)-1,4-phenylene-1,2-ethenediyl(2,5-diethoxy-1,4-phenylene)-1,2-ethenediyl-1,4-phenylene] (9CI) (CA INDEX NAME)

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RN 217632-49-0 HCAPLUS

CN Poly[[(4-methylphenyl)imino]-9,10-anthracenediyl[(4-methylphenyl)imino](3-methyl-1,4-phenylene)-1,2-ethenediyl(2,5-diproxy-1,4-phenylene)-1,2-ethenediyl(2-methyl-1,4-phenylene)] (9CI) (CA INDEX NAME)

\* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT

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\* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT

\*

IC ICM C08G061-12  
 ICS C09K011-06; G03G005-06; H05B033-22  
 CC 74-3 (Radiation Chemistry, Photochemistry, and Photographic and  
 Other Reprographic Processes)  
 Section cross-reference(s): 37, 38, 73  
 IT 217632-29-6P 217632-30-9P 217632-31-0P  
 (styryl-containing polymer as charge-transporting material for organic  
 electroluminescent device and **electrophotog.**  
 photoreceptor)  
 IT 217632-32-1 217632-33-2 217632-34-3 217632-35-4  
 217632-36-5 217632-37-6 217632-38-7  
 217632-39-8 217632-40-1 217632-41-2  
 217632-42-3 217632-43-4 217632-44-5 217632-45-6  
 217632-46-7 217632-47-8 217632-48-9  
 217632-49-0  
 (styryl-containing polymer as charge-transporting material for organic  
 electroluminescent device and **electrophotog.**  
 photoreceptor)

L25 ANSWER 49 OF 51 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1998:758655 HCAPLUS

DOCUMENT NUMBER: 130:59045

TITLE: Styryl-containing polymer, its manufacture,  
 and organic electroluminescent device,  
 electrophotographic photoreceptor, and  
 hole-transporting material using it

INVENTOR(S): Ueda, Hideaki; Kitahora, Takeshi; Nozaki,  
 Takeshi

PATENT ASSIGNEE(S): Minolta Camera Co., Ltd., Peop. Rep. China

SOURCE: Jpn. Kokai Tokkyo Koho, 1' pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 2

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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JP 10310606	A2	19981124	JP 1997-119194	1997 0509
US 6066712	A	20000523	US 1998-74914	1998 0508
PRIORITY APPLN. INFO.:			JP 1997-119192	A 1997 0509

JP 1997-119194

A

1997  
0509

**AB** The styryl-containing polymer is represented by  $[CH_2CH(Ar_1CH:CHAr_2)]_n$  ( $Ar_1$  = arylene;  $Ar_2$  = aryl, condensed polycyclic group, heterocyclic group;  $Ar_1$  and  $Ar_2$  may be substituted;  $n$  = natural number). The above polymer is manufactured by (1) the reaction between a P compound  $[CH_2CH(Ar_1CH_2X)]_n$  and an aldehyde compound  $Ar_2CHO$  or (2) the reaction between an aldehyde compound  $[CH_2CH(Ar_1CHO)]_n$  and a P compound  $Ar_2CH_2X$  [ $X$  =  $PO(OR_1)_2$  or  $PR_2Y$ ;  $R_1$  = lower alkyl;  $R_2$  = cycloalkyl, aryl;  $Y$  = halo]. The electroluminescent device contains the polymer in  $\geq 1$  organic compound thin layer including a light-emitting layer and the photoreceptor contains the polymer as a charge-transporting material. The hole-transporting material composed of the polymer is also claimed. The styryl-containing polymer shows good performance in charge-transporting and optical conductivity even after repeated use.

**IT** 217449-63-3 217449-78-0

(styryl-containing polymer as charge-transporting material for organic electroluminescent device and **electrophotog.** photoreceptor)

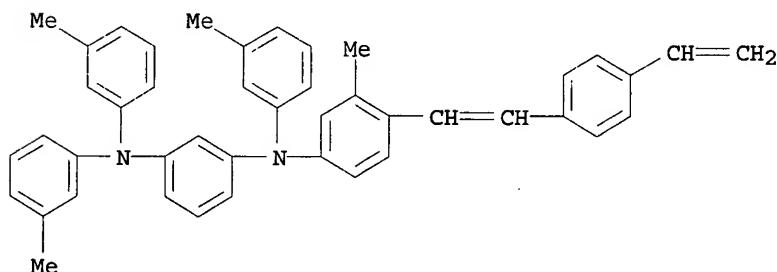
**RN** 217449-63-3 HCPLUS

**CN** 1,3-Benzenediamine, N-[4-[2-(4-ethenylphenyl)ethenyl]-3-methylphenyl]-N,N',N'-tris(3-methylphenyl)-, homopolymer (9CI) (CA INDEX NAME)

**CM** 1

**CRN** 217449-62-2

**CMF** C44 H40 N2



**RN** 217449-78-0 HCPLUS

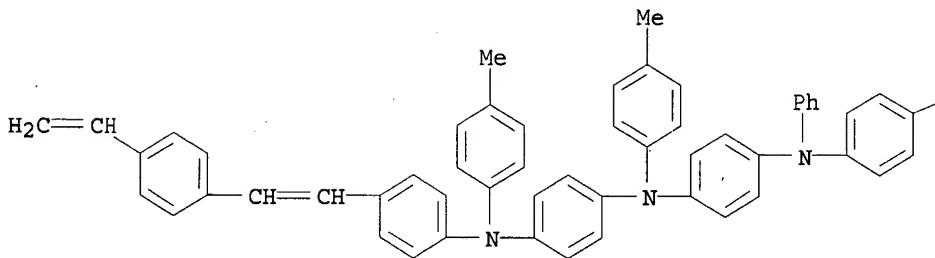
**CN** 1,4-Benzenediamine, N-[4-[2-(4-ethenylphenyl)ethenyl]phenyl]-N,N'-bis(4-methylphenyl)-N'-(4-[(4-methylphenyl)phenylamino]phenyl)-, homopolymer (9CI) (CA INDEX NAME)

**CM** 1

**CRN** 217449-77-9

**CMF** C55 H47 N3

PAGE 1-A



PAGE 1-B

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IC ICM C08F008-00  
 ICS C08F112-14; C08F112-32; C09K011-06; G03G005-06  
 CC 74-3 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)  
 Section cross-reference(s): 37, 38, 73  
 IT 184159-38-4 217449-58-6 217449-61-1 **217449-63-3**  
 217449-66-6 217449-69-9 217449-72-4 217449-74-6  
 217449-76-8 **217449-78-0** 217449-80-4 217449-82-6  
 217449-84-8 217449-86-0 217449-88-2 217449-90-6  
 217449-92-8 217449-94-0  
 (styryl-containing polymer as charge-transporting material for organic electroluminescent device and **electrophotog.** photoreceptor)

L25 ANSWER 50 OF 51 HCAPLUS COPYRIGHT 2005 ACS on STN  
 ACCESSION NUMBER: 1997:563439 HCAPLUS  
 DOCUMENT NUMBER: 127:191351  
 TITLE: Synthesis of polymers for hole and electron transport materials in organic electroluminescent devices  
 AUTHOR(S): Son, Jhun Mo; Sakaki, Yuichi; Ogino, Kenji;  
 Sato, Hisaya  
 CORPORATE SOURCE: Faculty of Technology, Tokyo University of Agriculture and Technology, Tokyo, 184, Japan  
 SOURCE: IEEE Transactions on Electron Devices (1997),  
 44(8), 1307-1314  
 CODEN: IETDAI; ISSN: 0018-9383  
 PUBLISHER: Institute of Electrical and Electronics Engineers  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 AB Styrene-type polymers having tetraphenylbenzidine (TPD) or tetraphenylphenyldiaminobenzene unit (PDA) and a oxadiazole unit on the side chain were prepared as hole and electron transport materials, resp., of an electroluminescent device. The device structures employed were [ITO/hole transport layer/Al] (type I), or [ITO/hole transport layer/electron transport layer/Al] (type II). Type I devices provided c.d. higher than 100 mA/cm<sup>2</sup> but no

luminescence was observed Type II devices emitted luminescence of about 10 cd/m<sup>2</sup> at the c.d. of about 170 mA/cm<sup>2</sup>. The emission maximum of these devices were 460 and 530 nm for the device using TPD and PDA, resp.

IT 194354-35-3P

(preparation of styrene derivative polymers for hole and electron transport materials in organic electroluminescent devices)

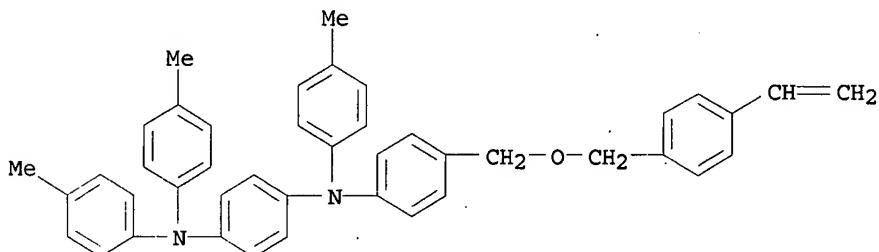
RN 194354-35-3 HCAPLUS

CN 1,4-Benzenediamine, N-[4-[(4-ethenylphenyl)methoxy]methyl]phenyl]-N,N',N'-tris(4-methylphenyl)-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 194354-34-2

CMF C43 H40 N2 O



CC 37-3 (Plastics Manufacture and Processing)

Section cross-reference(s): 73

IT 194354-33-1P 194354-35-3P 194354-36-4P

(preparation of styrene derivative polymers for hole and electron transport materials in organic electroluminescent devices)

REFERENCE COUNT: 17 THERE ARE 17 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L25 ANSWER 51 OF 51 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1996:746286 HCAPLUS

DOCUMENT NUMBER: 126:39392

TITLE: Organic thin-film electroluminescent device

INVENTOR(S): Ito, Juichi; Sato, Hisaya; Hayashi, Takako

PATENT ASSIGNEE(S): Toppan Printing Co Ltd, Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 10 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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JP 08259935	A2	19961008	JP 1995-65611	1995 0324
JP 3646339	B2	20050511		

PRIORITY APPLN. INFO.:

JP 1995-65611

1995  
0324

GI

\* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT  
 \*

AB An organic thin-film electroluminescent device, suited for use in optical displays, comprises a multilayer structure including an organic light-emitting layer and a hole injection/transport layer containing a compound represented by I ( G1 = CH or N; G2, G3 = H, C1-4 alkyl, alkoxy, dialkylamino, Q1, Q2, Q3, Q4, a group containing  $\geq 1$  benzene, naphthalene, anthracene, and perylene rings, benzene or naphthalene rings condensed with the Ph group in I; R = H, C1-4 alkyl, alkoxy, and dialkylamino).

IT 184159-36-2  
 (organic thin-film electroluminescent device)

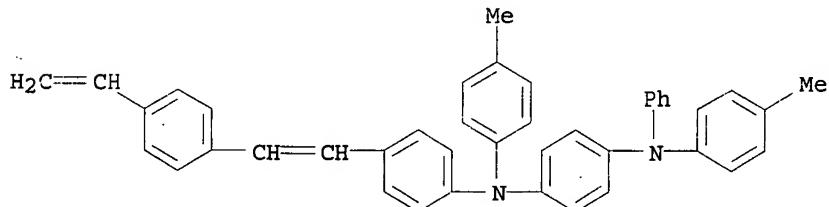
RN 184159-36-2 HCPLUS

CN 1,4-Benzenediamine, N-[4-[2-(4-ethenylphenyl)ethenyl]phenyl]-N,N'-bis(4-methylphenyl)-N'-phenyl-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 184159-35-1

CMF C42 H36 N2



IC ICM C09K011-06  
 ICS H05B033-14

CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

Section cross-reference(s): 74, 76

IT 184159-34-0 184159-36-2 184159-38-4  
 (organic thin-film electroluminescent device)